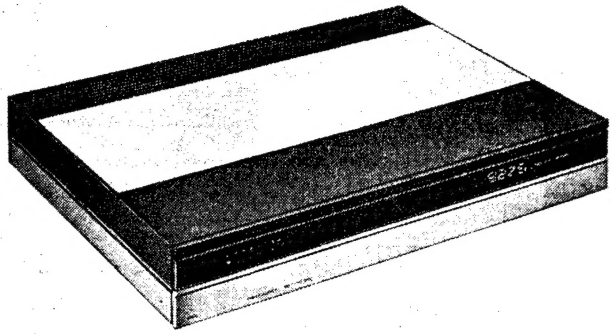
Bang&Olufsen



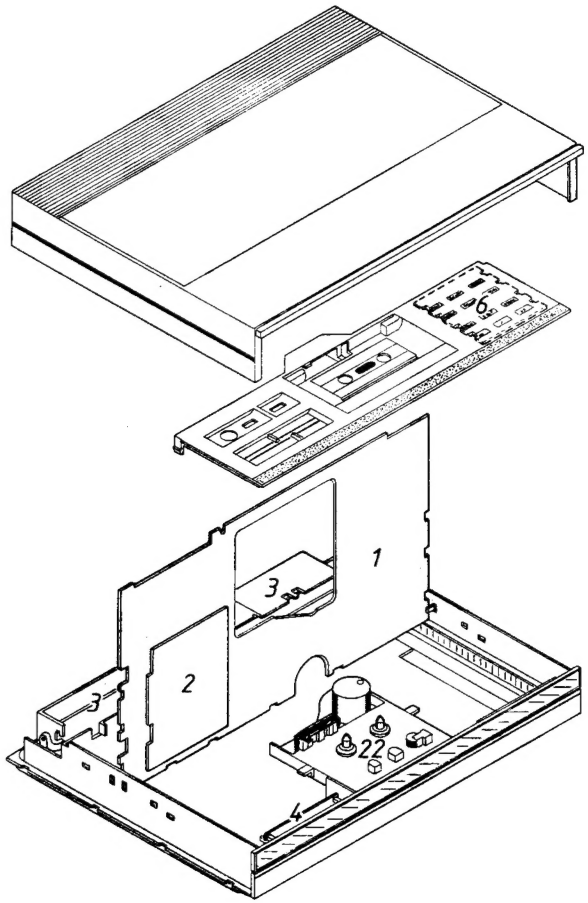
BEOCORD 5000

**Type 4921-4922-4923-
4924-4925-4926-4927**

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

SERVICEANVISNING
SERVICE MANUAL

1 Signal and Control
2 Dolby
3 Transformer and Power Supply
4 PPM
6 Keyboard
22 Tape Deck



MÅLEBETINGELSER

Alle DC spændinger er målt i forhold til stel, med voltmeter med en indgangsmodstand 10 Mohm.
Oscillogrammer og AC spændinger er målt i forhold til stel med oscilloscop eller voltmeter med en indgangsmodstand på 1 Mohm.
Spændinger: Stilling gengive (333 Hz 250 pWb mm).
AC spændinger opgivet i millivolt (mV). Eks. 733 mV.
DC spændinger opgivet i volt (V). Eks. 0,7 V.
Signalvejen i optage position er vist i venstre kanal, og gengive position er vist i højre kanal.

MEASURING CONDITIONS

All DC voltages have been measured in relation to ground with voltmeter with an input resistance of 10 Mohms.
Oscillograms and AC voltages have been measured in relation to ground with oscilloscope or voltmeterwith an input resistance of 1 Mohm.
Voltages: Position play back (333 Hz 250 pWb).
AC voltages stated in millivolts (mV). Ex.: 733 mV.
DC voltages stated in volts (V). Ex.: 0.7 V.
The signal path in recording pos. is shown in left channel, and replay pos. is shown in right channel.

MESSBEDINGUNGEN

Alle DC Spannungen sind im Verhältnis zu Masse, mit Voltmeter mit ein Eingangswiderstand von 10 Mohm gemessen.
Oszillogramme und AC Spannungen sind im Verhältnis zu Masse, mit Oszilloskop oder Voltmeter mit einem Eingangswiderstand von 1 Mohm gemessen.
Spannungen: Position Wiedergabe (333 Hz 250 pWb).
AC Spannungen in Millivolt (mV) aufgegeben, z.B.: 733 mV.
DC Spannungen in Volt (V) aufgegeben, z.B.: 0,7 V.
Der Signalweg in Aufnahmeposition ist im linkem Kanal gezeigt, und die Wiedergabeposition ist im rechten Kanal gezeigt.

CONDITIONS DE MESURE

Toutes les tensions en courant continu (CC) sont mesurées par rapport à la masse à l'aide d'un voltmètre avec une résistance interne de 10 Mohms.
Les oscillogrammes et les tensions en courant alternatif (CA) sont mesurés par rapport à la masse à l'aide d'un oscilloscope ou d'un voltmètre avec une impédance d'entrée de 1 Mohm.
Tensions: Position reproduction (333 Hz 250 pWb mm) les tensions CA sont indiquées en millivolt mV), par exemple 733 mV.
Les tensions CC sont indiquées en volt (V), par exemple 0,7 V.
La trajectoire du signal en position enregistrement est indiquée dans le canal gauche, et en position reproduction dans le canal droit.

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DIAGRAM A

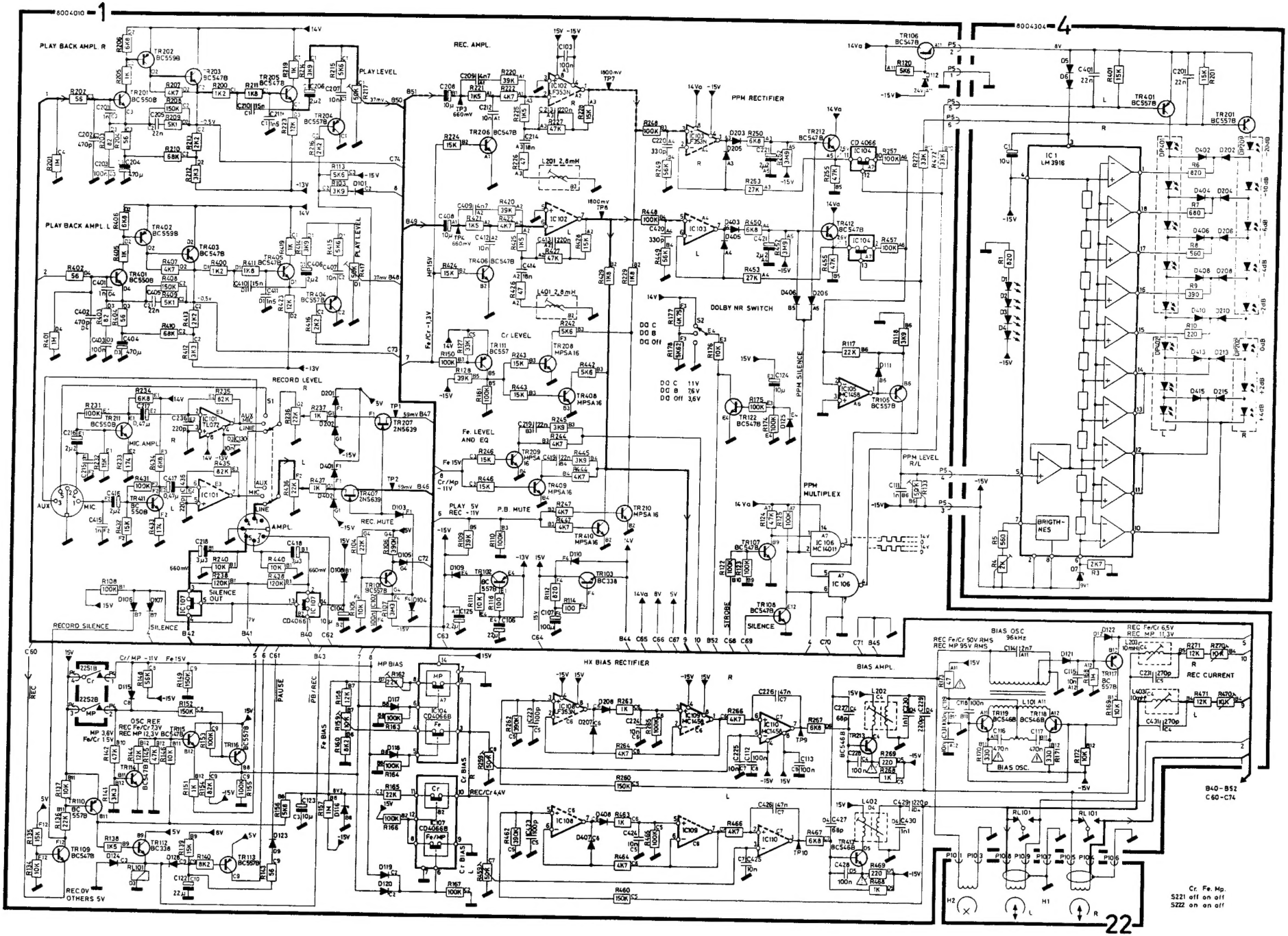

DIAGRAM B

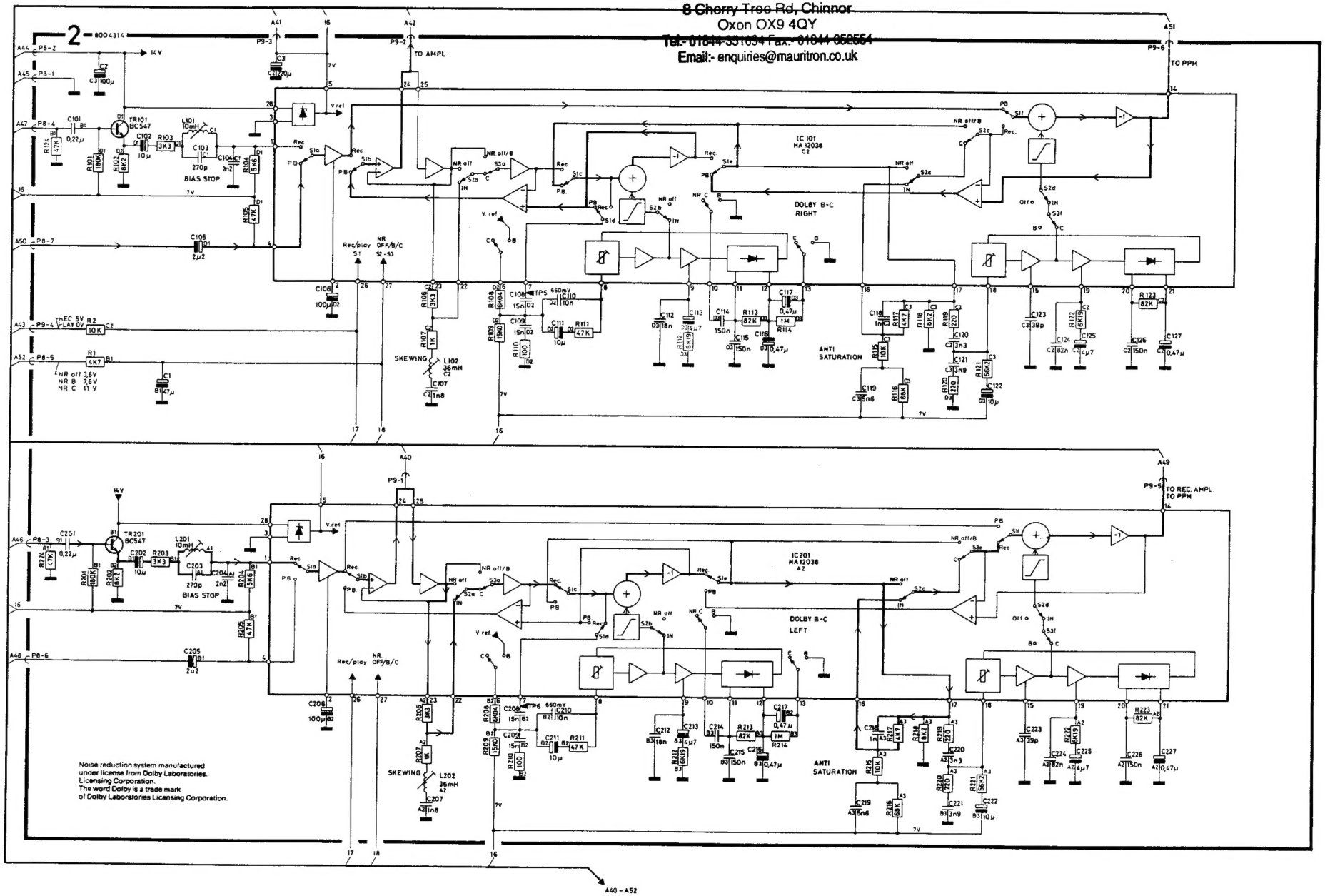

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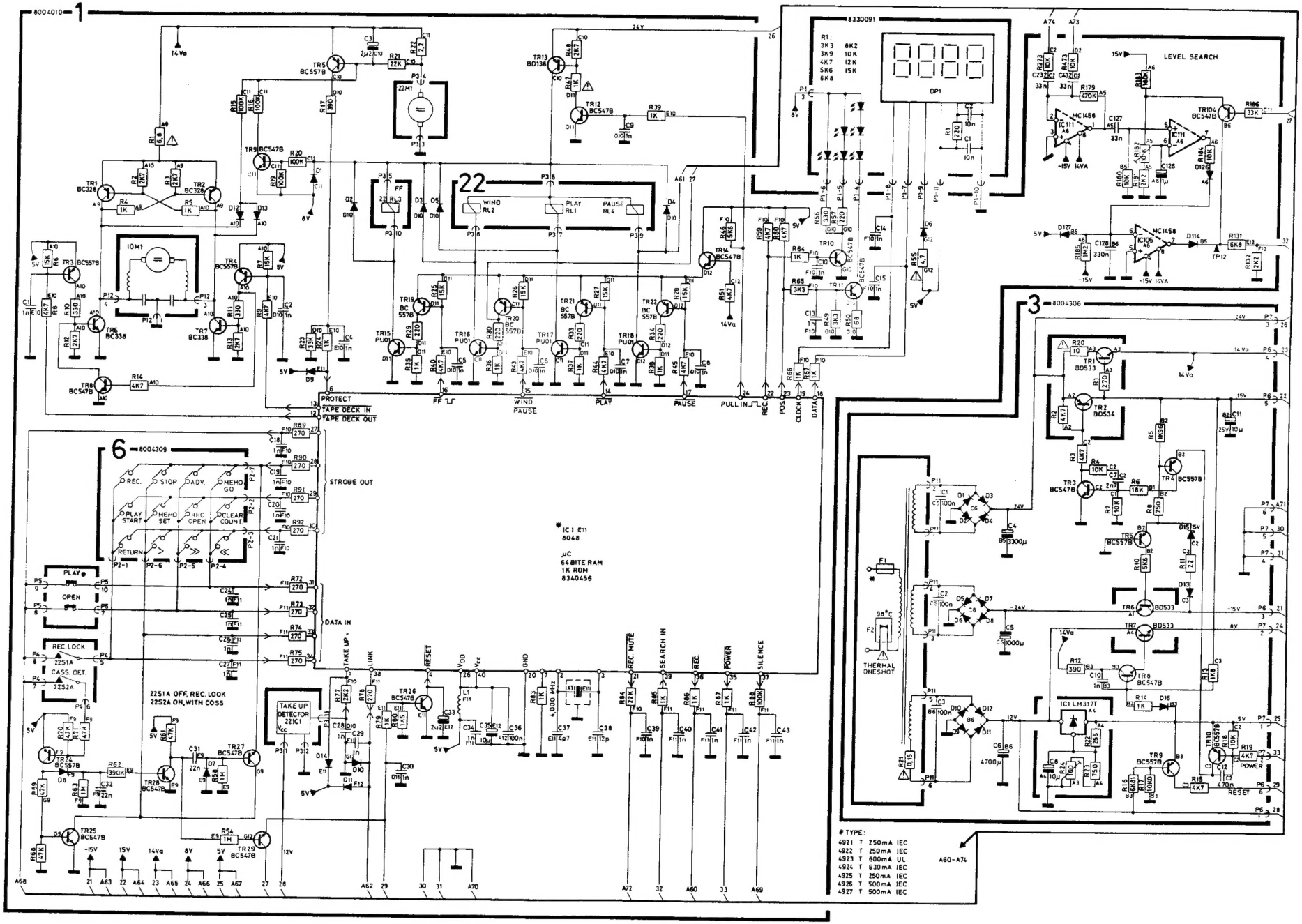
DIAGRAM C



FUNCTION TABLE 1IC1

Pause (pin 17)	FF (pin 16)	Wind (pin 15)	Play (pin 14)	Stop → Play	Stop → Rec. Pause	Rec. Pause → Recording	Recording → Rec. Pause	Stop → Advance	Play → Advance	Stop → Return	Play → Return
1	1	1	1	0.	0.			0.	1.	0.	1.
1	1	1	0	1.		1.	0.		0.	1.	0/2.
1	1	0	1								
1	1	0	0					3.	4.	2.	3.
1	0	1	0					1.	2.		
1	0	0	0					2.	3.		
0	1	1	1		1.						
0	1	1	0		2.		1.				
0	1	0	0		3.	0.	2.				

0.= Start

1.-2.-3.~ The order in which the levels change within the actual function.

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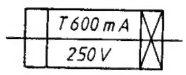
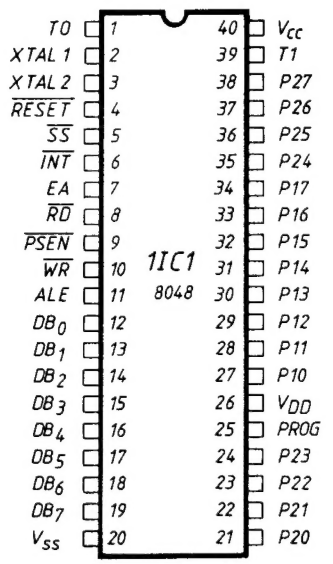
Explanation of the fuse symbols used in the set:

Explanation des symboles du fusible utilisés dans l'appareil:



Replace with same type 600 milliamperes 250 volts slow acting fuse.

Remplacer par un fusible de meme type retardé et de 600 milliamperes 250 volts.



DIAGRAMFORKLARING

På diagrammet er der angivet typenumre på transistorer og IC'er i de tilfælde hvor typenummeret er entydigt for komponentes placering i kredsløbet – f.eks. TR20/BC 557B.

Hvis positionsnummeret er efterfulgt af en stjerne **skal** reservedelsnummeret benyttes, da denne komponent er specielt udvalgt – f.eks. TR102*.

Koordinatsystem

De største printplader er forsynet med et koordinatsystem. Komponenterne på disse printplader er på diagrammet forsynet med en koordinatbetegnelse, som fortæller i hvilket felt på printpladen de er placeret (mindre skrifttype end positionsnummeret - f.eks. B3).

Styrekredsløb

I visse styrekredsløb er den aktive tilstand angivet med en bogstavsbetegnelse (Cr = High med CrO_2 bånd). Hvis betegnelsen er forsynet med negationstegn er den aktive tilstand LOW ($\overline{Cr}$ = LOW med CrO_2 bånd).

Ledningsforbindelser

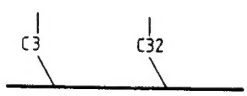
Ledningsforbindelserne på diagrammet er samlet i »bundter«. De enkelte ledninger er forsynet med koder, der fortæller hvortil de går.

INTERN FORBINDELSE PÅ EN DIAGRAMSIDE

Interne forbindelser på en diagramside angives med et tal. Knækket på ledningen viser i hvilken retning den anden ende af ledningen findes.

FORBINDELSE TIL EN ANDEN DIAGRAMSIDE

DIAGRAM A



Forbindelsen til en anden diagramside angives med et tal, samt bogstav indikation på det diagram forbindelsen går til.

Symbol for sikkerhedskomponenter

Ved udskiftning af komponenter med dette symbol skal der anvendes komponenter med samme reservedelsnummer. Den nye komponent skal monteres på samme måde som den udskiftede.

EXPLANATION OF DIAGRAM

Type numbers of transistors and IC's have been indicated on the diagram in those cases where the type number is unambiguous for the position of the component in a circuitry – e.g. TR20/BC 557B.

If the position number is followed by an asterisk the spare part number **must be used** because this component has been expecially selected – e.g. TR102*.

System of Co-ordinates

The largest PC-boards have been provided with a co-ordinate system. The components on these PC-boards are provided with a grid reference on the diagram indicating in what grid they are positioned on the PC-board (smaller typing than position numbers – e.g. B3).

Control Circuit

In certain control circuits the active mode has been indicated by means of a letter symbol (Cr = HIGH with CrO_2 tapes). If the symbol has a negation superscript bar the active mode is LOW ($\overline{Cr}$ = LOW with CrO_2 tapes).

Wiring Connections

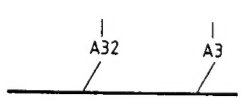
The wiring connections on the diagram are assembled in »bundles«. The individual wires are coded to indicate to where they are leading.

INTERNAL CONNECTION ON ONE DIAGRAM PAGE

Internal connections on a diagram page are indicated by a number. The bend of the wire indicates in which direction the other end of the wire may be found.

CONNECTION TO ANOTHER DIAGRAM PAGE

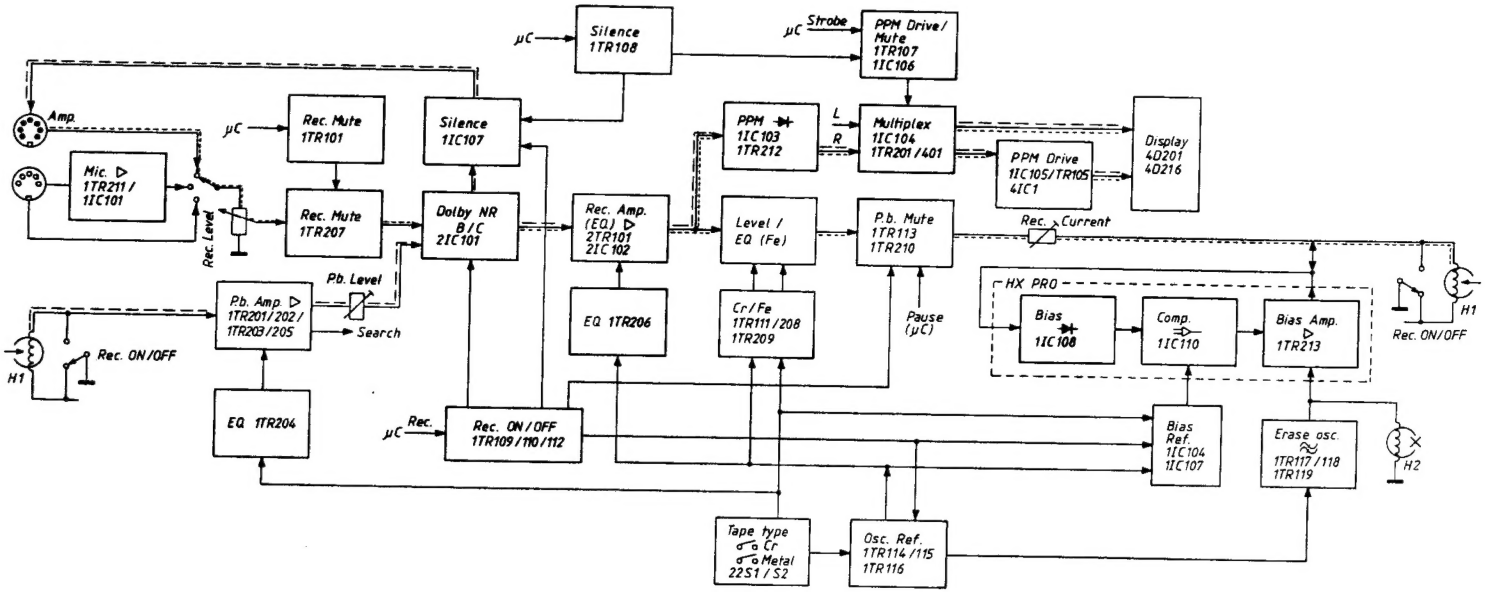
DIAGRAM C

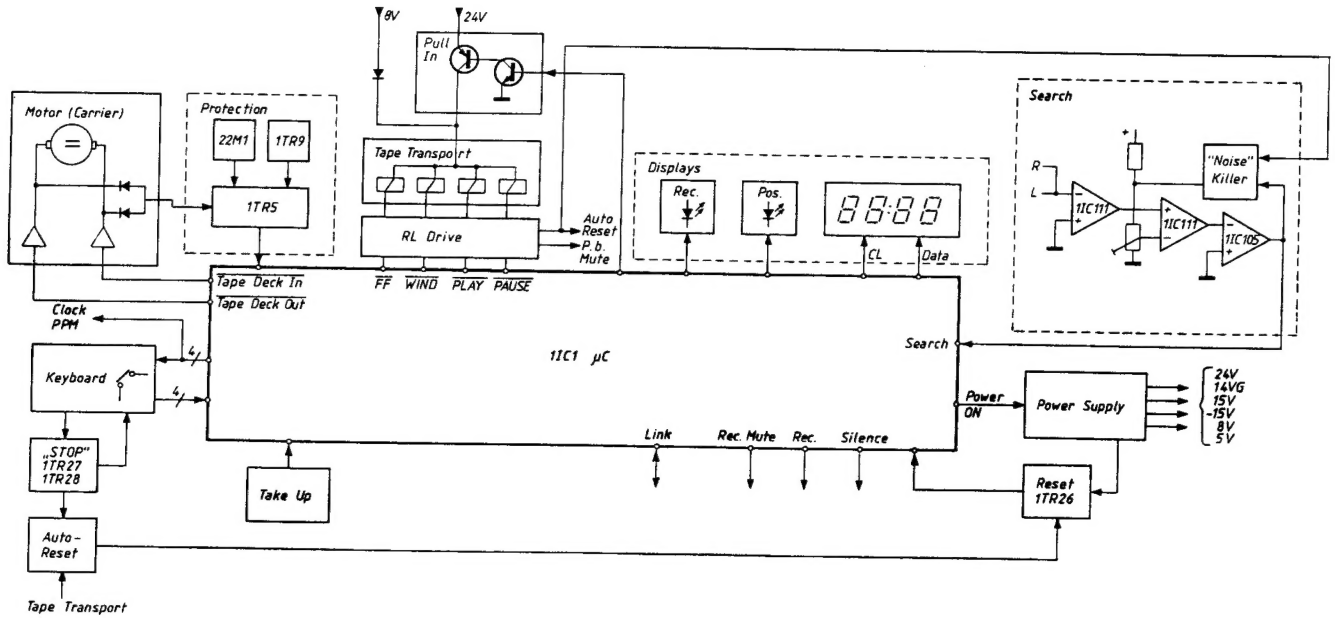


Connections to another diagram page are indicated by a number, as well as by a letter of the diagram to which the connections lead.

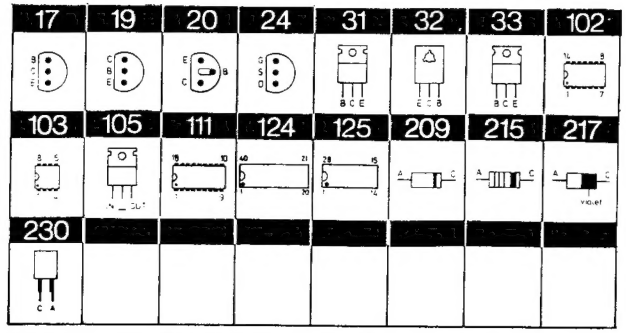
Symbol for Safety Components

When replacing components with this symbol components with identical part numbers are to be used. The new component must be fitted in the same way as the one replaced.





SEMI-CONDUCTORS



Transistors

1TR1-2	8320331	20	BC 328-25/18
1TR3-5	8320152	20	BC 557B 18
1TR6-7	8320329	20	BC 338-25/18
1TR8-	8320097	20	BC 547B
1TR12			
1TR13	*8320240	32	BD 136/W
1TR14	8320097	20	BC 547B
1TR15-	8320422	19	92 PU01
1TR18			
1TR19-	8320152	20	BC 557B 18
1TR22			
1TR24			
1TR25-	8320097	20	BC 547B
1TR29			
1TR101-	8320152	20	BC 557B 18
1TR102			
1TR103	8320329	20	BC 338-25/18
1TR104	8320097	20	BC 547B
1TR105	8320152	20	BC 557B 18
1TR106-	8320097	20	BC 547B
1TR109			
1TR110-	8320152	20	BC 557B 18
1TR111			
1TR112	8320329	20	BC 338-25/18
1TR113	8320152	20	BC 557B 18
1TR114-	8320097	20	BC 547B
1TR115			

1TR116-	8320152	20	BC 557B 18
1TR117			
1TR118-	8320237	20	BC 546B
1TR119			
1TR122	8320152	20	BC 557B 18
1TR401	*8320344	20	BC 550B
		20	BC 384 B-N
1TR402	*8320069	20	BC 559B
		20	BC 214B/BK
		17	BC 214 BL
1TR403	8320097	20	BC 547B
1TR404	8320152	20	BC 557B 18
1TR405-	8320097	20	BC 547B
1TR406			
1TR407	*8320396	24	MPF 4392
		24	2N 5639
		24	2N 4392
1TR408-	8320366	19	MPS A16
1TR410			
1TR411	*8320344	20	BC 550B
		20	384 B-N
1TR412	8320097	20	BC 547B
1TR413	8320237	20	BC 546B
2TR201	8320097	20	BC 547B
3TR1	8320368	31	BD 533
		33	BD 539A
3TR2	8320369	31	BD 534
		33	BD 540A

3TR3	8320097	20	BC 547B
3TR4-5	8320152	20	BC 557B 18
3TR6-7	8320368	31	BD 533
		33	BD 539A
3TR8	8320097	20	BC 547B
3TR9-10	8320152	20	BC 557B 18
4TR401	8320152	20	BC 557B 18

IC's

1IC1△	8340456	124	UPD 8048C
1IC101△	8340224	103	TL072 CP
1IC102-△	8340456	124	UPD 8048C
1IC103			
1IC104△	8340202	102	HEF 4066BP
		102	CD4066 BCN
		102	MC14066 BCP
1IC105	8340048	103	MC 1458P
		103	MC 1458 CP1
		103	MC 1458 N
		103	SFC 2458 DC
1IC106△	8340109	102	CD4011 BCN
		102	MC14011 BCP
1IC107△	8340202	102	HEF4066 BP
		102	CD4066 BCN
		102	MC14066 BCP
1IC108△	8340456	124	UPD 8048C
1IC109-	8340048	103	MC 1458P
1IC111		103	MC1458 CP1
		103	MC 1458 N
		103	SFC 2458 DC
2IC201	8340506	125	HA 12038
3IC1	8340065	105	LM 340-05
4IC1	8340457	111	LM 3916N

Diodes

1D1-6	8300023	209	1N4002
		209	1N4003
1D7-14	8300058	209	1N 4148
1D101-		217	SFD 184
1D109		215	1N 4148
1D110	8300023	209	1N 4002
		209	1N 4003
1D111-	8300058	209	1N 4148
1D115		217	SFD 184
		215	1N 4148
1D116	8300173	209	ZPD 8.2V 5%
		209	BZX 79C 8V2
		209	BZX 83C 8V2
1D123	8300058	209	1N 4148
		217	SFD 184
		215	1N 4148
1D401-	8300058	209	1N 4148
1D403		217	SFD 184
1D405-		215	1N 4148
1D408			
3D1-	8300023	209	1N 4002
3D12		209	1N 4003
3D13	8300058	209	1N 4148
		217	SFD 184
		215	1N 4148
3D15	8300053	209	ZPD 15V 5%
		209	BZX 79C 15V
		209	BZX 83 C15V
3D16	8300058	209	1N 4148
		217	SFD 184
		215	1N 4148
4D1-4	8330075	230	V331PA
			LTL 9292A

4D5-	8300058	209	1N 4148
4D6		217	SFD 184
		215	1N 4148
4D7	8300028	209	ZPD 9.1V 5%
		209	BZX 79 C9V1
		209	BZX 83 C9V1
4D402	8300058	209	1N 4148
4D404		217	SFD 184
4D406		215	1N 4148
4D408			
4D410			
4D413			
4D415			
4DP401	8330077		GL 105 N5
4DP402	8330076		GL 103 R5

* Speciel udvalgt eller bearbejdet eksemplar.
* Specially selected or adapted sample
* Speziell ausgewähltes und bearbeitets Exemplar.

△ betyder at statisk elektricitet kan ødelægge komponenten.
△ indicates that static electricity may destroy the component.
△ bedeutet, daß statische Elektrizität die Komponente zerstören kann.
△ signifi que électricité statique peut detruire le composant.

LIST OF ELECTRICAL PARTS

Signal and Control, 8004010, PCB1

Resistors not mentioned are 5% 1/4 W carbon film.

R1	5010874	6.8 Ω ±5% 1/2W	R182	5370074	10 kΩ ±20% 0.1W
R22	5010682	2.2 Ω ±5% 1/4W	R404	5020503	56.2 Ω ±1% 1/4W
R47	5020583	1 kΩ ±5% 1W	R408	5020130	150 kΩ ±1% 1/2W
R55	5020501	4.7 Ω ±5% 1W	R409	5010733	5.1 kΩ ±5% 1/4W
R107	5020319	3.3 MΩ ±1% 1/2W	R417	5370201	47 kΩ ±20% 0.1W
R115	5310109	2 x 22 kΩ ±20% 0.2W	R431	5020263	100 kΩ ±1% 1/4W
R133	5370061	47 kΩ ±20% 0.1W	R432	5020074	15 kΩ ±1% 1/4W
R159	5370074	10 kΩ ±20% 0.1W	R433	5020471	174 Ω ±1% 1/4W
R162	5370068	22 kΩ ±20% 0.1W	R434	5020112	6.81 kΩ ±1% 1/4W
R170	5011019	330 Ω ±5% 1/2W	R452	5010392	3.9 MΩ ±5% 1/2W
R171	5011019	330 Ω ±5% 1/2W	R459	5370061	47 kΩ ±20% 0.1W
R173	5020345	47 Ω ±10% 1/4W	R469	5020551	220 Ω ±5% 1/3W
R177	5020141	4.75 kΩ ±1% 1/4W	R470	5370074	10 kΩ ±20% 0.1W
R178	5020221	5.62 kΩ ±1% 1/4W			

C1	4010035	1 nF ±10% 63V	C115	4010106	10 nF -20+80% 40V
C2	4010035	1 nF ±10% 63V	C116	4200523	470 nF ±20% 50V
C3	4200423	2.2 µF ±20% 50V	C117	4130234	470 nF ±10% 63V
C4	4010035	1 nF ±10% 63V	C118	4130224	100 nF ±10% 63V
C5	4010035	1 nF ±10% 63V	C119	4130224	100 nF ±10% 63V
C6	4010035	1 nF ±10% 63V	C122	4200508	22 µF ±20% 25V
C7	4010035	1 nF ±10% 63V	C123	4200510	10 µF ±20% 16V
C8	4010035	1 nF ±10% 63V	C124	4200524	10 µF ±20% 25V
C9	4010035	1 nF ±10% 63V	C125	4200423	2.2 µF ±20% 50V
C10	4010035	1 nF ±10% 63V	C126	4200426	1 µF ±20% 50V
C13	4010035	1 nF ±10% 63V	C127	4130257	33 nF ±20% 63V
C14	4010035	1 nF ±10% 63V	C128	4130217	330 nF ±5% 63V
C15	4010035	1 nF ±10% 63V	C130	4130109	10 nF ±10% 250V
C18	4010035	1 nF ±10% 63V	C131	4130109	10 nF ±10% 250V
C19	4010035	1 nF ±10% 63V	C401	4010105	1 nF ±10% 100V
C20	4010035	1 nF ±10% 63V	C402	4010128	470 pF ±10% 63V
C21	4010035	1 nF ±10% 63V	C403	4130224	100 nF ±10% 63V
C24	4010035	1 nF ±10% 63V	C404	4200143	470µF-10+100%6,3V
C25	4010035	1 nF ±10% 63V	C405	4130255	22 nF ±5% 63V
C26	4010035	1 nF ±10% 63V	C406	4200423	2.2 µF ±20% 50V
C27	4010035	1 nF ±10% 63V	C407	4130109	10 nF ±10% 250V
C28	4010035	1 nF ±10% 63V	C408	4200510	10 µF ±20% 16V
C29	4010035	1 nF ±10% 63V	C409	4010101	4.7 nF ±10% 63V
C30	4010035	1 nF ±10% 63V	C410	4130269	15 nF ±2.5% 63V
C31	4010107	22 nF -20+100% 40V	C411	4101020	1.5 nF ±5% 63V
C32	4010107	22 nF -20+100% 40V	C412	4130109	10 nF ±10% 250V
C33	4200423	2.2 µF ±20% 50V	C413	4130245	220 nF ±5% 63V
C34	4010035	1 nF ±10% 63V	C414	4130267	18 nF ±5% 63V
C35	4200510	10 µF ±20% 16V	C415	4010105	1 nF ±10% 100V
C36	4030027	100 nF ±20% 25V	C416	4201035	2.2µF -10+50% 63V
C37	4000145	4.7 pF ±0.25 pF 63V	C417	4200523	0.47 µF ±20% 50V
C38	4000149	12 pF ±5% 63V	C418	4200485	3.3 µF ±20% 25V
C39	4010035	1 nF ±10% 63V	C419	4130255	22 nF ±5% 63V
C40	4010035	1 nF ±10% 63V	C420	4010118	330 pF ±10% 100V
C41	4010035	1 nF ±10% 63V	C421	4200423	2.2 µF ±20% 50V
C42	4010035	1 nF ±10% 63V	C423	4000139	100 pF ±5% 63V
C43	4010035	1 nF ±10% 63V	C424	4010106	10 nF -20+80% 40V
C102	4130224	100 nF ±10% 63V	C425	4010106	10 nF -20+80% 40V
C103	4130224	100 nF ±10% 63V	C426	4130240	47 nF ±10% 63V
C104	4200524	10 µF ±20% 25V	C427	4000132	68 pF ±5% 250V
C106	4200508	22 µF ±20% 25V	C428	4130224	100 nF ±10% 63V
C107	4200403	100µF -10+100% 25V	C429	4101007	220 pF ±5% 63V
C111	4010105	1 nF ±10% 100V	C430	4100000	1.1 nF ±5% 63V
C112	4130224	100 nF ±10% 63V	C431	4010110	270 pF ±10% 100V
C113	4130224	100 nF ±10% 63V	C432	4130257	33 nF ±20% 63V
C114	4100141	2.7 nF ±5% 630V	C436	4010104	220 pF ±10% 250 V

L1	8020342	10 µH	L402	8022123	Bias
L101	8020338	Osc.	L403	8022101	10 mH
L401	8022059	2.8 mH		3304017	Screen for coil's

RL101	7600074	Relay 4.5 V		2542607	Screen for µP

P2	7220253	Plug 7 pins	P10	7220124	Plug 9/8 pins
P3	7220177	Plug 11 pins	P12	7220122	Plug 4/3 pins
P4	7220168	Plug 8 pins		7210356	AUX Socket 5 pol.
P5	7220169	Plug 10 pins			

S1	7400232	AUX/MIC switch	S2	7400232	Dolby switch

X1	8090003	4.00 MHz ±200 PPM

Dolby, 8004314, PCB2

R208	5020222	6.04 kΩ ±1% 1/4W	R221	5020362	56.2 kΩ ±1% 1/4W
R209	5020074	15 kΩ ±1% 1/4W	R222	5020223	6.19 kΩ ±1% 1/4W
R212	5020223	6.19 kΩ ±1% 1/4W			

C1	4200516	47 µF ±20% 16V	C213	4200515	4.7 µF ±20% 25V
C2	4200403	100µF -10+100% 25V	C214	4130232	150 nF ±20% 63V
C3	4200122	220µF -10+100% 10V	C215	4130232	150 nF ±20% 63V
C201	4130233	220 nF ±20% 63V	C216	4200476	0.47 µF ±20% 50V
C202	4200431	10 µF ±20% 16V	C217	4200476	0.47 µF ±20% 50V
C203	4010110	270 pF ±10% 100V	C218	4010105	1 nF ±10% 100V
C204	4010103	2.2 nF ±10% 63V	C219	4100114	5.6 nF ±5% 63V
C205	4200517	2.2 µF ±20% 50V	C220	4100058	3.3 nF ±2.5% 63V
C206	4200511	100 µF ±20% 10V	C221	4100216	3.9 nF ±2.5% 63V
C207	4100192	1.8 nF ±5% 63V	C222	4200431	10 µF ±20% 16V
C208	4130269	15 nF ±2.5% 63V	C223	4000154	39 pF ±5% 63V
C209	4130269	15 nF ±2.5% 63V	C224	4130266	82 nF ±5% 63V
C210	4130268	10 nF ±5% 63V	C225	4200515	4.7 µF ±20% 25V
C211	4200431	10 µF ±20% 16V	C226	4130232	150 nF ±20% 63V
C212	4130267	18 nF ±5% 63V	C227	4200476	0.47 µF ±20% 50V

L201	8022111	10 mH	L202	8022127	36 mH

P8	7220247	Plug 7 pins	P9	7220247	Plug 7 pins

Power Supply, 8004306, PCB3

R5	5020651	1.96 kΩ ±2% 1/4W	R21	5020588	0.15 Ω ±5% 0.5W
R8	5020342	750 Ω ±1% 1/4W	R22	5020342	750 Ω ±1% 1/4W
R16	5020112	6.81 kΩ ±1% 1/4W	R23	5020330	255 Ω ±1% 1/4W
R17	5020110	10.0 kΩ ±1% 1/4W	R24	5370240	100 Ω ±20% 0.1W
R20	5010506	10 Ω ±5% 1/4W			

C1	4130179	100 nF ±20% 63V	C7	4010065	2.7 nF ±10% 63V
C2	4130179	100 nF ±20% 63V	C8	4200484	10 µF ±20% 25V
C3	4130179	100 nF ±20% 63V	C10	4010027	1 nF ±10% 100V
C4	4200528	3300µF -10+50% 40V	C11	4200484	10 µF ±20% 25V
C5	4200388	1000ΩF -10+50% 35V	C12	4130234	470 nF ±10% 63V
C6	4200529	4700µF -10+50% 25V			

F1	6600000	250 mA, type 4921, 4922, 4925	F2	6609014	98° C 2A
				7500002	Holder for Fuse
	6600047	600 mA, type 4923			
	6600005	630 mA, type 4924			
	6600024	500 mA, type 4926, 4927			

P6	7220147	Plug 6 pins	P11	7220167	Plug 6 pins
P7	7220147	Plug 6 pins	P11	7210135	Socket 6 pol.

PPM, 8004304, PCB4

R4	5370213	2.2 kΩ ±20% 0.1W

Display, 8330091, 10DP1

C1	4200342	10 µF -10+50% 63V	C401	4010107	22 nF-20+100%40V
C16	4010041	10 nF -20+80% 40V	C17	4010041	10 nF -20+80% 40V

MEKANISK STYKLISTE/
LIST OF MECHANICAL PARTS

1001	2043011	Skrue AM4 x 8, sort	Screw AM4 x 8, black
1002	2622304	Skive	Washer
1003	2391059	Låsestykke	Locking piece
1004	3413900	Kabinet, alum.	Cabinet, alu.
	3413901	Kabinet, teak	Cabinet, teak
	3413903	Kabinet, palis.	Cabinet, rosewood
	3413904	Kabinet, eg	Cabinet, oak
	3413905	Kabinet, hvid	Cabinet, white
1005	2039027	Skrue AM3 x 6, sort	Screw AM3 x 6, black
1006	2039908	Skrue AM3 x 8	Screw AM3 x 8
1007	2039908	Skrue AM3 x 8	Screw AM3 x 8
1008	3152356	Ledningsholder	Wire holder
1009	2039034	Skrue AM3 x 12, sort	Screw AM3 x 12, black
1010	2530438	Skinne komplet	Rail complete
1011	2794094	Styrerulle	Steering cylinder
1012	2390046	E-ring	E-ring
**1013	3035026	Glidesko	Plastic foot
1014	3454294	Bund	Bottom
1015	3168347	Betjeningspanel	Control panel
1016	2013094	Skrue M2,9 x 6,5, sort	Screw M2.9 x 6.5, black
1020	2700030	Tandstang	Toothed bar
1021	2039026	Skrue AM3 x 4, sort	Screw AM3 x 4, black
1022	2775868	Knap	Button
1023	3151209	Holder f. PCB	Holder for PCB
1024	3454299	Dækplade	Cover plate
1025	3152314	Holder	Holder
1026	2039026	Skrue AM3 x 4, sort	Screw AM3 x 4, black
1027	2390046	E-ring	E-ring
1028	2794094	Styrerulle	Steering cylinder
1029	2036201	Skrue AM2,6 x 3	Screw AM2.6 x 3
1030	2816198	Bladfjeder	Leafspring
1031	2530437	Skinne komplet	Rail complete
1032	2722039	Remskive	Pulley
1033	2732059	Rem	Belt
1034	2834080	Aksel	Shaft
1035	3150055	Servicebøjle	Service clamp
1036	3152356	Ledningsholder	Wire holder
1037	2013203	Skrue M2,9 x 13	Screw M2.9 x 13
1038	3112285	Skuffe	Drawer
1041	2039006	Skrue AM3 x 5	Screw AM3 x 5
1042	3112276	Vinkel	Bracket
1043	8004310	PCB, ON/OFF-EJECT	PCB, ON/OFF-EJECT
1044	7500148	Kontakt fjeder	Contact spring
1045	8004310	PCB, ON/OFF-EJECT	PCB, ON/OFF-EJECT
1046	7500148	Kontakt fjeder	Contact spring
1047	3151209	Holder f. PCB	Holder for PCB
1048	2039027	Skrue AM3 x 6, sort	Screw AM3 x 6, black
1049	2039028	Skrue AM3 x 8, sort	Screw AM3 x 8, black
1050	2622306	Skive	Washer
1051	2390001	E-ring	E-ring
1052	3114221	Profil m. glas	Profile with glass
1053	2380011	Møtrik	Nut
1054	2622306	Skive	Washer
1055	2568704	Profil	Profile
1056	3168346	Front panel	Front panel
1057	2013094	Skrue M2,9 x 6,5, sort	Screw M2.9 x 6.5, black
1058	2645039	Juster vinkel 0,5 mm	Adjustment bracket 0.5 mm
	2645041	Juster vinkel 0,4 mm	Adjustment bracket 0.4 mm
	2645042	Juster vinkel 0,3 mm	Adjustment bracket 0.3 mm
	2645043	Juster vinkel 0,2 mm	Adjustment bracket 0.2 mm
1059	2775969	Knapsæt	Set of buttons
1060	2380011	Møtrik	Nut
1061	2622041	Skive	Washer
1062	2645039	Juster vinkel 0,5 mm	Adjustment bracket 0.5 mm
	2645041	Juster vinkel 0,4 mm	Adjustment bracket 0.4 mm
	2645042	Juster vinkel 0,3 mm	Adjustment bracket 0.3 mm
	2645043	Juster vinkel 0,2 mm	Adjustment bracket 0.2 mm
1063	3152363	Transportsikring	Transit protection device
1064	3152279	Ledningsholder	Wire holder
1065	2620078	Filt	Filt
1066	3170214	Isolationsstykke	Insulation piece
	3170211	Isolationsstykke type 4923	Insulation piece type 4923

10DP1	8330091	Display	Display
*10M1	8400094	Motor m. remskive	Motor with pulley

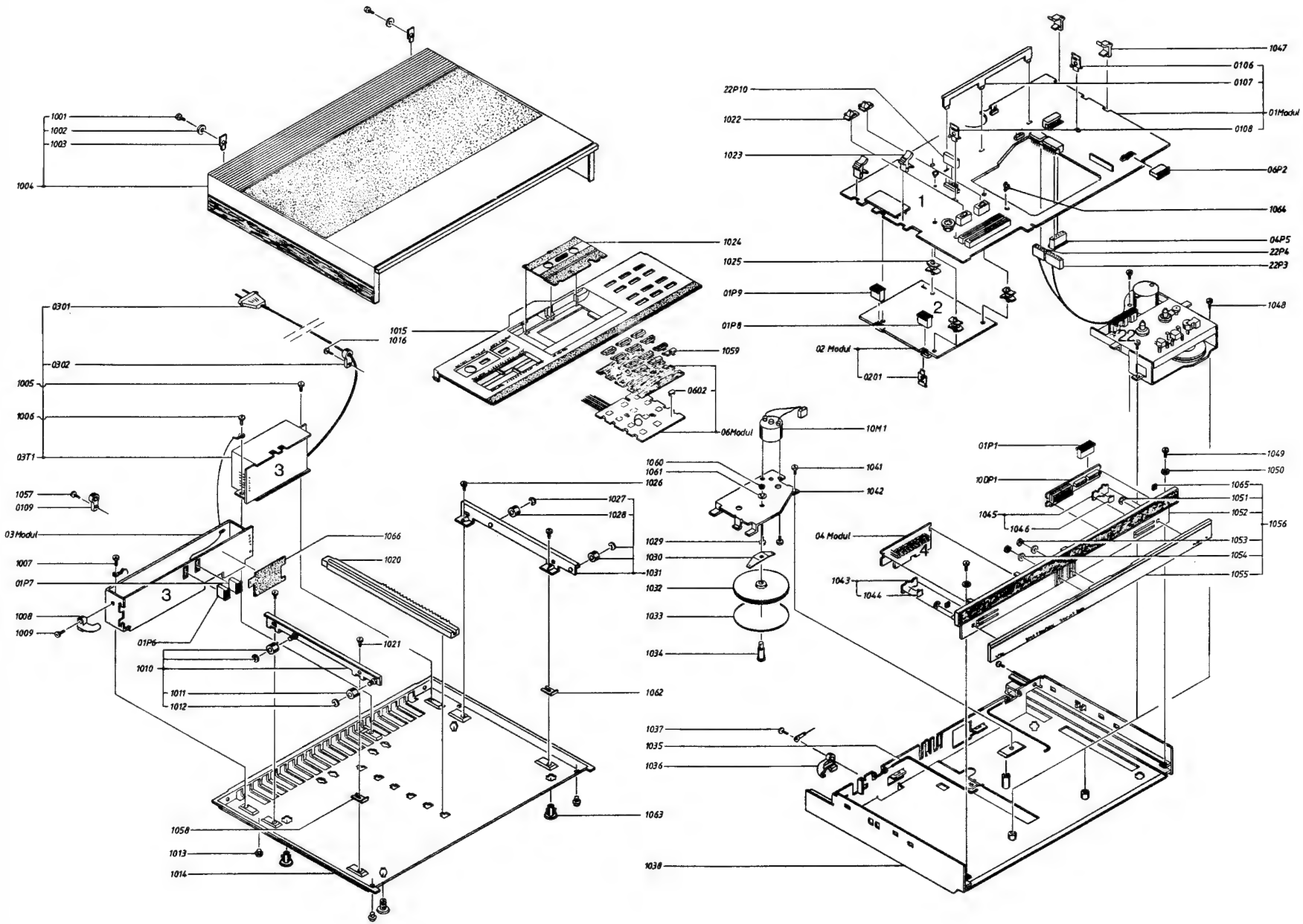
01Modul	8004010	PCB, signal og styring	PCB, Signal and Control
0106	2542596	Vinkel f. service	Bracket for service
0107	2542019	Vinkel	Bracket
0108	2542596	Vinkel f. service	Bracket for service
0109	2938204	Ledningsholder	Wire holder
01P1	6274061	Båndkabel m/fatning 9 pol.	Flat cable w/socket 9 pol
01P6	6274062	Båndkabel m/fatning 6 pol.	Flat cable w/socket 6 pol
01P7	6274062	Båndkabel m/fatning 6 pol.	Flat cable w/socket 6 pol
01P8	6274059	Båndkabel m/fatning 7 pol.	Flat cable w/socket 7 pol
01P9	6274059	Båndkabel m/fatning 7 pol.	Flat cable w/socket 7 pol
02Modul	8004314	PCB, Dolby	PCB, Dolby
0201	2542596	Vinkel f. service	Bracket for service
03Modul	8054091	Netdel	Power supply
0301	6271115	Netledning type 4921, 4922, 4926, 4927	Mains connector type 4921 4922, 4926, 4927
	6370251	Netledning type 4923	Mains connector type 4923
	6271119	Netledning type 4924	Mains connector type 4924
	6271091	Netledning type 4925	Mains connector type 4925
0302	2938210	Ledningsholder	Wire holder
	2938204	Ledningsholder type 4925	Wire holder type 4925
03T1	8013281	Transformator, 220 V type 4921	Transformer, 220 V type 4921
	8013282	Transformator, 240 V type 4922	Transformer, 240 V type 4922
	8013283	Transformator, 120 V type 4923 USA	Transformer, 120 V type 4923, USA
	8013284	Transformator, 100 V type 4924 JAP	Transformer, 100 V type 4924, JAP
	8013285	Transformator, 240 V type 4925 AUS	Transformer, 240 V type 4925, AUS
	8013286	Transformator, 114 V type 4926	Transformer, 114 V type 4926
	8013287	Transformator, 127 V type 4927	Transformer, 127 V type 4927
04Modul	8004304	PCB, PPM	PCB, PPM
04P5	6274058	Båndkabel m/fatning 10 pol	Flat cable w/socket 10 pol
06Modul	8004309	PCB, tastatur	PCB, keyboard
0602	7500148	Kontakt fjeder	Contact spring
06P2	6274057	Båndkabel m/fatning 7 pol.	Flat cable w/socket 7 pol
22P3	6275020	Ledning m/fatning 11 pol.	Leads w/socket 11 pol
22P4	6275019	Ledning m/fatning 8 pol.	Leads w/socket 8 pol
22P10	6275044	Ledning m/fatning 8 pol.	Leads w/socket 8 pol
	3152394	Kabelbinder	Cable binder

**efter individ nr. 779015 bruges 3035119

**after part no. 779015 3035119 is used

* Løs remskive til 10M1 kan leveres under reservedelsnummer 2722040.
Af og påmontering af remskive skal foretages med forsigtighed for at motoren ikke beskadiges:
Remskiven klippes af med en skævbider.
Ved montering af ny remskive skal motorens bundleje presses mod et hårdt underlag.
Remskiven limes med IS12 nr. 3980033.

* Pulley for 10M1 is available separately, it has order no. 2722040.
Mounting and dismantling of pulley must be carried out cautiously to avoid damage of the motor:
The pulley is cut off with a pair of side-cutting pliers.
When mounting pulley the bottom bearing of the motor must be pressed against a hard foundation.
The pulley is glued with IS12, no. 3980033.


1001
1002
1003
1004
0301
0302
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03T1
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0109
03 Modul
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1009
01P6
1010
1011
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1013
1014
1066
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1062
1063
1060
1061
10M1
1041
1042
1024
1025
1015
1016
01P9
01P8
1059
0602
06Modul
02 Modul
0201
22P10
1022
1023
1047
0106
0107
01Modul
0108
06P2
1064
04P5
22P4
22P3
1048
01P1
10P1
1049
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1065
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04 Modul
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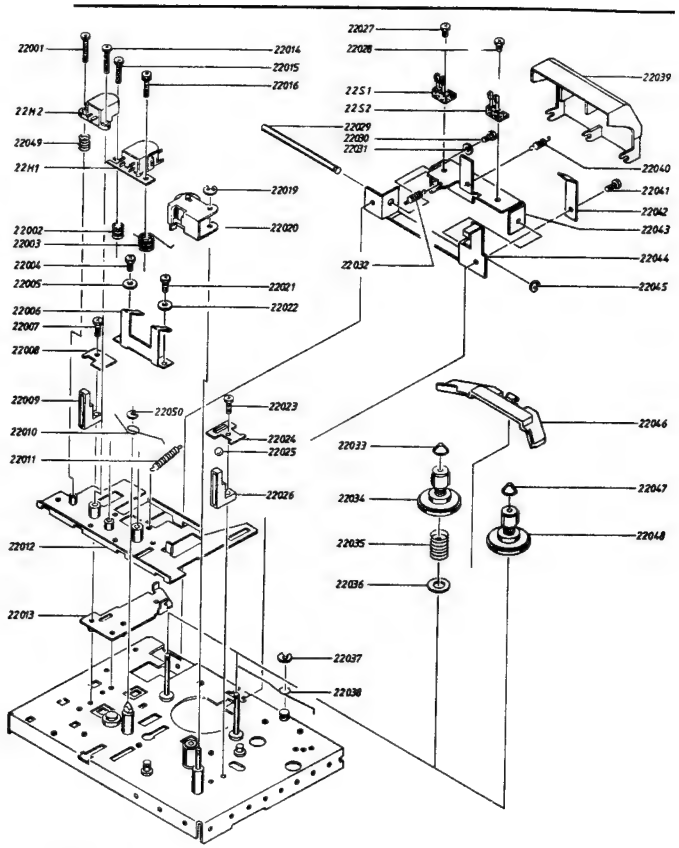
Løbeværk/
Tape Deck



22001	2034068 Skrue 2 x 5	Screw 2 x 5
22002	2812800 Fjeder	Spring
22003	2818000 Fjeder	Spring
22004	2036019 Skrue 2,6 x 4	Screw 2.6 x 4
22005	2622357 Skive	Washer
22006	2816281 Bladfjeder	Leaf spring
22007	2039050 Skrue 2,6 x 6	Screw 2.6 x 6
22008	2816280 Profil	Profile
22009	3010000 Arm	Arm
22010	2819181 Fjeder	Spring
22011	2810146 Fjeder	Spring
22012	3112293 Chassis	Chassis
22013	3112186 Vinkel	Bracket
22014	2034063 Skrue 2 x 5	Screw 2 x 5
22015	2034068 Skrue 2 x 5	Screw 2 x 5
22016	2036042 Skrue 2 x 5, sort	Screw 2 x 5, black
22019	2390073 E-ring	E-ring
22020	2794099 Trykrulle komplet	Thrust roller
22021	2036019 Skrue 2,6 x 4	Screw 2.6 x 4
22022	2622357 Skive	Washer
22023	2039050 Skrue 2,6 x 6	Screw 2.6 x 6
22024	2816207 Bladfjeder	Leaf spring
22025	2917020 Kugle	Ball
22026	3010000 Arm	Arm
22027	2034067 Skrue 2 x 4	Screw 2 x 4
22028	2034067 Skrue 2 x 4	Screw 2 x 4
22029	2831000 Stift	Pin
22030	2039039 Skrue 3 x 4	Screw 3 x 4

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel: 01844-351694 Fax: 01844-352554
Email: enquiries@mauritron.co.uk

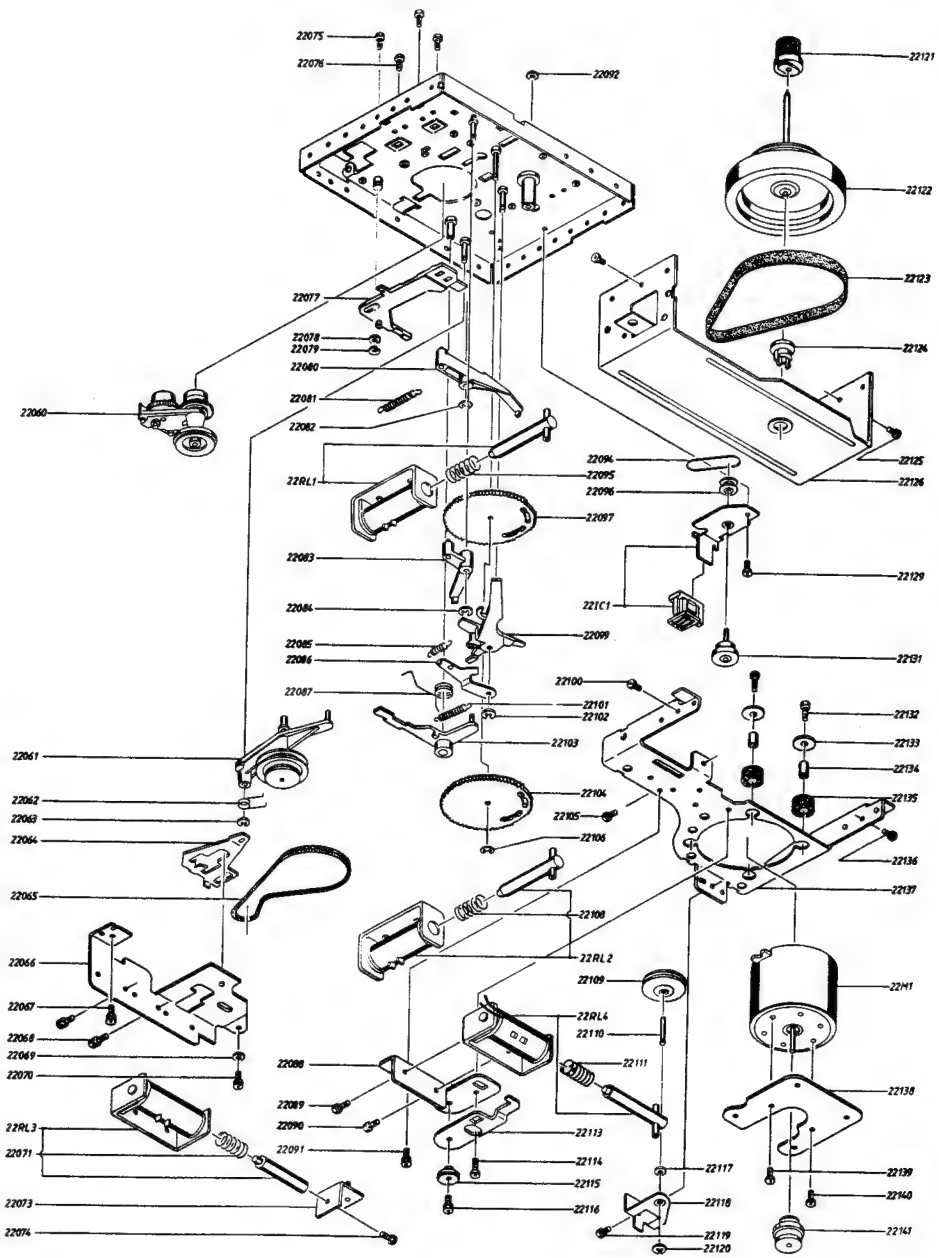
22031	2622358 Skive	Washer
22032	2810148 Fjeder	Spring
22033	3164547 Dæksel	Cover
22034	2726002 Spoletallerken	Supply reel
22035	2812096 Fjeder	Spring
22036	2622343 Skive	Washer
22037	2390090 E-ring	E-ring
22038	2819183 Fjeder	Spring
22039	3164548 Hus	Housing
22040	2810149 Fjeder	Spring
22041	2039039 Skrue 3 x 4	Screw 3 x 4
22042	2816208 Vinkel	Bracket
22043	2548205 Vinkel	Bracket
22044	2548206 Vinkel	Bracket
22045	2390056 E-ring	E-ring
22046	2851134 Arm	Arm
22047	3164547 Dæksel	Cover
22048	2726002 Spoletallerken	Take-up reel
22049	2812000 Fjeder	Spring
22050	2390064 E-ring	E-ring
22H1	8600068 Tonehoved	Tape head
22H2	8600055 Slettehoved	Erase head
22S1	7400286 Omskifter	Switch
22S2	7400286 Omskifter	Switch

22060	2794098 Kobling	Clutch
22061	2750000 Kobling	Clutch
22062	2819182 Fjeder	Spring
22063	2390090 E-ring	E-ring
22064	3014005 Arm	Arm
22065	2732000 Rem	Belt
22066	2542620 Vinkel	Bracket
22067	2036022 Skrue 2,6 x 5, sort	Screw 2.6 x 5, black
22068	2038063 Skrue 3 x 5, sort	Screw 3 x 5, black
22069	2622132 Skive	Washer
22070	2036022 Skrue 2,6 x 5, sort	Screw 2.6 x 5, black
22071	2812152 Fjeder	Spring
22073	2530466 Vinkel	Bracket
22074	2038063 Skrue 3 x 5, sort	Screw 3 x 5, black
22075	2039043 Skrue 3 x 4	Screw 3 x 4
22076	2039043 Skrue 3 x 4	Screw 3 x 4
22077	2851135 Arm	Arm
22078	2622293 Skive	Washer
22079	2390053 E-ring	E-ring
22080	2851136 Arm	Arm
22081	2810147 Fjeder	Spring
22082	2390073 E-ring	E-ring
22083	2851137 Arm	Arm
22084	2390073 E-ring	E-ring
22085	2810150 Fjeder	Spring
22086	2851131 Arm	Arm
22087	2819184 Fjeder	Spring
22088	2530468 Vinkel	Bracket
22089	2038063 Skrue 3 x 5, sort	Screw 3 x 5, black
22090	2038063 Skrue 3 x 5, sort	Screw 3 x 5, black
22091	2039051 Skrue 2,6 x 5	Screw 2.6 x 5
22092	2622296 Skive	Washer
22094	2732039 Rem	Belt
22095	2812097 Fjeder	Spring
22096	2724070 Hjul	Wheel
22097	2700037 Drivhjul	Drive wheel
22099	2851138 Arm	Arm
22100	2039049 Skrue 3 x 5	Screw 3 x 5
22101	2810151 Fjeder	Spring
22102	2390073 E-ring	E-ring
22103	2851133 Arm	Arm
22104	2700038 Drivhjul	Drive wheel
22105	2039049 Skrue 3 x 5	Screw 3 x 5
22106	2390073 E-ring	E-ring
22108	2812097 Fjeder	Spring
22109	2804000 Hjul	Wheel
22110	2831047 Stift	Pin
22111	2812150 Fjeder	Spring
22113	2851132 Vinkel	Bracket
22114	2039051 Skrue 2,6 x 5	Screw 2.6 x 5

22115	2932114 Bøsning	Bushing
22116	2036043 Skrue 2,6 x 6, sort	Screw 2.6 x 6, black
22117	2622299 Skive	Washer
22118	2530467 Vinkel	Bracket
22119	2036022 Skrue 2,6 x 5, sort	Screw 2.6 x 5, black
22120	2390056 E-ring	E-ring
22121	2700036 Tandhjul	Toothed wheel
22122	2794096 Svinghjul	Flywheel
22123	2732064 Rem	Belt
22124	2905078 Lås	Lock
22125	2039049 Skrue 3 x 5	Screw 3 x 5
22126	3112295 Vinkel	Bracket
22129	2039049 Skrue	Screw
22131	3356044 Hjul samlet	Wheel assy
22132	2036044 Skrue 2,6 x 10, sort	Screw 2.6 x 10, black
22133	2622282 Skive	Washer
22134	2932046 Bøsning	Bushing
22135	2932000 Gummibøsning	Rubber bushing
22136	2039049 Skrue 3 x 5	Screw 3 x 5
22137	3112294 Vinkel	Bracket
22138	3122054 Vinkel	Bracket
22139	2036021 Skrue 2,6 x 3	Screw 2.6 x 3
22140	2036021 Skrue 2,6 x 3	Screw 2.6 x 3
22141	2722028 Remskive	Pulley
22RL1	6840023 Sugespole, play	Solenoid, play
22RL2	6840023 Sugespole, wind	Solenoid, wind
22RL3	6840027 Sugespole, FF	Solenoid, FF
22RL4	6840030 Sugespole, pause	Solenoid, pause
22IC1	8004007 IC m/holder	IC w/holder
22M1	8400000 Motor	Motor

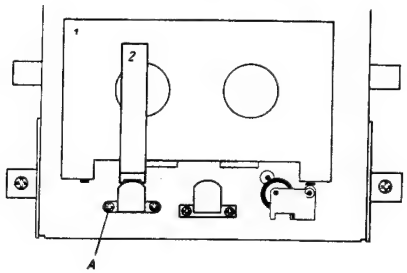
Ikke viste dele/
Parts not shown

6270062 Signalledning m/ledn. holder	Connector w/wire holder
3391251 Yderæske	Outer carton
3397443 Skumemballage sæt	Foam packing set
3414040 Kabinets finer sæt, aluminium	Cabinet's veneer set, aluminium
3414041 Kabinets finer sæt, teak	Cabinet's veneer set, teak
3414043 Kabinets finer sæt, palis.	Cabinet's veneer set, rosewood
3414044 Kabinets finer sæt, eg	Cabinet's veneer set, oak
3414045 Kabinets finer sæt, hvid	Cabinet's veneer set, white
3391576 Emb. til 01 Modul	Pack for 01 Module
3391574 Emb. til 02 Modul	Pack for 02 Module
3391575 Emb. til 03 Modul	Pack for 03 Module
3504260 Betjeningsanvisning, DK	Operating Manual, DK
3504261 Betjeningsanvisning, S	Operating Manual, S
3504262 Betjeningsanvisning, SF	Operating Manual, SF
3504263 Betjeningsanvisning, GB	Operating Manual, GB
3504264 Betjeningsanvisning, D	Operating Manual, D
3504265 Betjeningsanvisning, F	Operating Manual, F
3504266 Betjeningsanvisning, NL	Operating Manual, NL
3504267 Betjeningsanvisning, USA	Operating Manual, USA



MEKANISKE JUSTERINGER

Højde

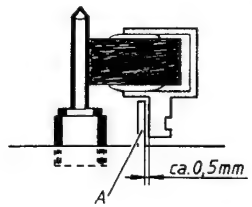


Højde slettehoved justering foretages med justereværktøj 1 og 2 fra justereværktøjssæt 3624020.
Justereværktøj lægges i kassetteholderen som vist på skitsen.
Tonehovedbroen presses forsigtigt ind mod værktøj 2.
Med skruen A justeres til båndstyret går ind over værktøj 2.
Højden på tonehovedet kontrolleres ligeledes med værktøj 2.

Der kan korrigeres for højdefejl v.h.a. skiver under opspændingerne til tonehovedet. Følgende skiver kan benyttes:

2624052 0,1 mm
2624053 0,2 mm
2624054 0,3 mm

Frigang trykrulle



Tonehovedbroen trykkes i bund.
Afstanden mellem tappen A på tonehovedbroen og trykrullearmen skal da være ca. 0,5 mm.
Justering foretages ved at bukke tappen A.

MECHANICAL ADJUSTMENTS

Height

Adjust the height of the erase head by means of the adjustment tools 1 and 2 from the adjustment tool kit 3624020.
Position the adjustment tools in the cassette tray holder as shown in the diagram.
Press with due care the tape head bridge against tool 2.
Adjust with the screw A until the tape guide starts to overlap tool 2.
The tape head height is also controlled with tool No. 2.

It is possible to correct faulty height setting by means of washers under the tape head fixtures. The following washers are applicable:

2624052 0.1 mm
2624053 0.2 mm
2624054 0.3 mm

Clearance of pressure roller

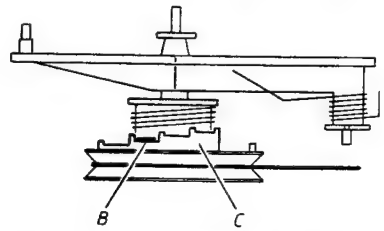
Press the tape head bridge until it bottoms.
The distance between the pin A on the tape head bridge and the pressure roller arm should now be approx. 0.5 mm.
Make the adjustment by bending the pin A.

Opsamlemoment

Opsamlekoblingen position 22061 afmonteres.

Take-up moment

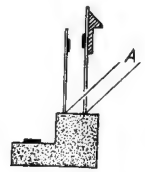
Remove the take-up clutch, position 22061.



Justering foretages med messingringen B.
Opsamlemomentet skal ligge indenfor 30-80p cm.
Er momentet for lavt, trækkes messingringen B op fra remskiven og drejes op ad trappetrinene C.
Er momentet for højt, drejes messingringen ned ad trappetrinene.

Make the adjustment with the brass ring B.
The take-up moment should be within 30-80p cm.
In case the moment is too low, pull the brass ring B up from the pulley and turn it up the steps C.
If the moment is too high, turn the brass ring down the steps.

Mikroswitche



De fire mikroswitche på løbeværkets bagkant kan justeres til sikkert skift, ved ilægning og udtagning af en kassette, ved at bukke switchene forsigtigt i punkterne A.

Micro-switches

The four microswitches at the rear edge of the drive unit can be adjusted to perform positive switching when loading or removing a cassette by, with due care, bending the switches at the points A.

Play sugespole

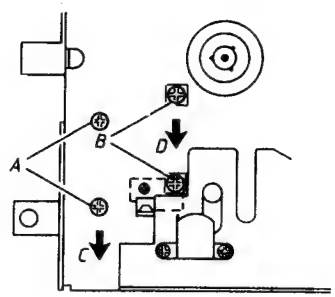
Når ankeret på 22RL1 trykkes i bund, skal det øverste kurvehjul 22097 gå i indgreb, sker dette ikke foretages følgende justering:

Skruerne A løsnes, og sugespolen 22RL1 trækkes frem i pilen C's retning.
Sugespolen holdes fast, og ankeret trykkes i bund, derefter trækkes sugespolen forsigtigt tilbage indtil det øverste kurvehjul 22097 går i indgreb.

Play solenoid

When the armature of 22RL1 is pressed all the way down, the top cam wheel 22097 shall mesh.
Should this not be the case, make the following adjustments:

Loosen the screws A and pull the solenoid 22RL1 forward in the direction of the arrow C.
Hold the solenoid firmly and press the armature down until it bottoms. Now pull the solenoid carefully rearwards until the top cam wheel 22097 is meshing.



Wind sugespole

Når ankeret på 22RL2 trykkes i bund, skal det nederste kurvehjul 22104 gå i indgreb, sker dette ikke foretages følgende justering:

Skruerne B løsnes, og sugespolen 22RL2 trækkes frem i pilen D's retning.
Sugespolen holdes fast, og ankeret trykkes i bund, derefter trækkes sugespolen forsigtigt tilbage indtil det nederste kurvehjul 22104 går i indgreb.

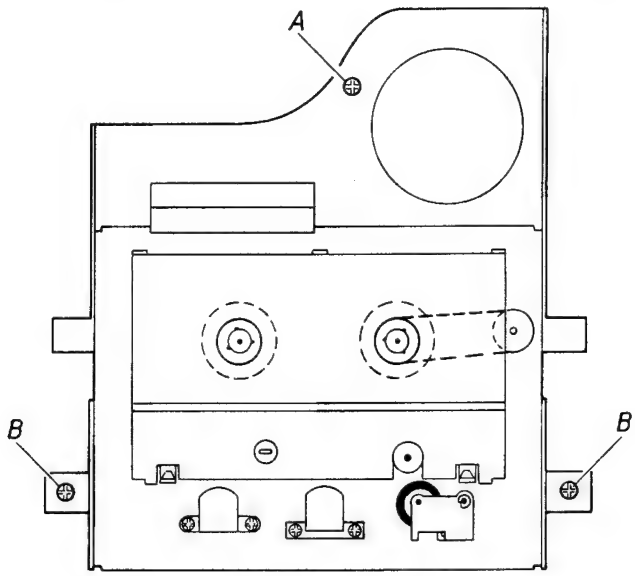
Wind solenoid

When the armature of 22RL2 is pressed all the way down, the bottom cam wheel 22104 shall mesh. Should this not be the case, make the following adjustments:

Loosen the screws B and pull the solenoid 22RL2 forward in the direction of the arrow D.
Hold the solenoid firmly and press the armature down until it bottoms. Now pull the solenoid carefully rearwards until the bottom cam wheel 22104 is meshing.

Løbeværk montering og centrering

Fitting and centre alignment of drive unit

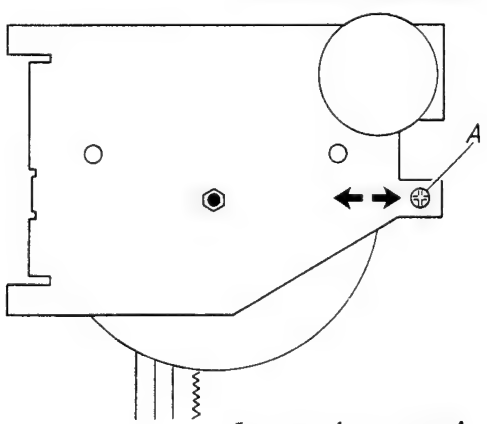


Løbeværket stilles ned på de tre søjler i skuffebunden.
Betjeningspanelet monteres på skuffen.
Løbeværket centreres efter hullerne i dækpladen for løbeværket.
Skruen A monteres.
Betjeningspanelet afmonteres og skruerne B monteres.

Place the recorder drive unit on the three columns at the bottom of the drawer.
Fit the control panel on to the drawer.
Align the recorder drive unit centrally with the holes in the drive unit cover plate.
Fit the screw A.
Remove the control panel and fit the screws B.

Tandstangsdrev

Toothed rack drive

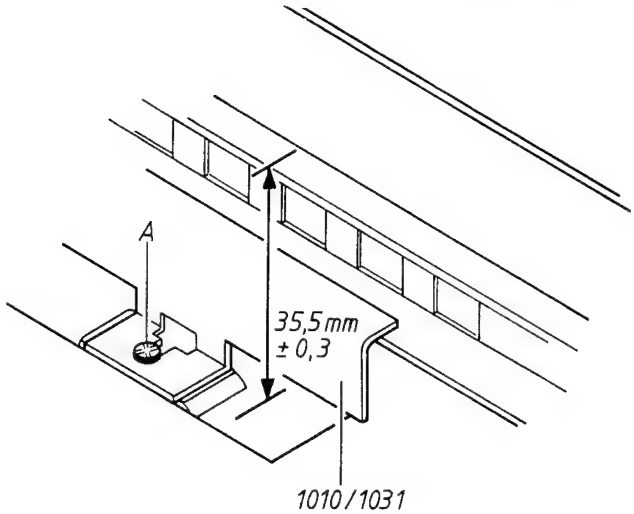


Skruen A løsnes.
Vinkel med tandhjul skubbes forsigtigt i en af pilenes retninger, indtil der er 1-2 mm slør mellem tandhjulet og tandstangen.

Loosen the screw A.
Push carefully the bracket with the toothed wheel in either direction of the arrows until there is a play of 1-2 mm between the toothed wheel and the toothed rack.

Skuffe højde front

Drawer height (front)



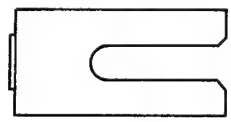
Afstanden fra bundpladen til overkanten af skinnen, som er svejset på skuffesiderne skal være 35,5 ±0,3 mm.
Justering kan foretages ved at løsne skinnerne 1010 (venstre side) og 1031 (højre side) med skruerne A, og indlægge skiver mellem skinnerne og bundpladen.
Skiverne skal indlægges ved skruerne A og kun i forkanten.
Der skal indlægges ens skiver i begge sider.

The distance from the bottom plate to the top edge of the rails which are welded on to the drawer sides must be 35.5 ±0.3 mm.
This distance is adjustable by loosening the rails 1010 (left-hand side) and 1031 (right-hand side) by means of the screws A and by inserting shims between the rails and the bottom plate.
The shims must be inserted at the screws A and at the front edge only.
Always insert uniform shims at both sides.

Indlægsskiver med dette udseende kan leveres under følgende nr.

Shims of this design are available under the following numbers:

0,2 mm	2645043
0,3 mm	2645042
0,4 mm	2645041
0,5 mm	2645039

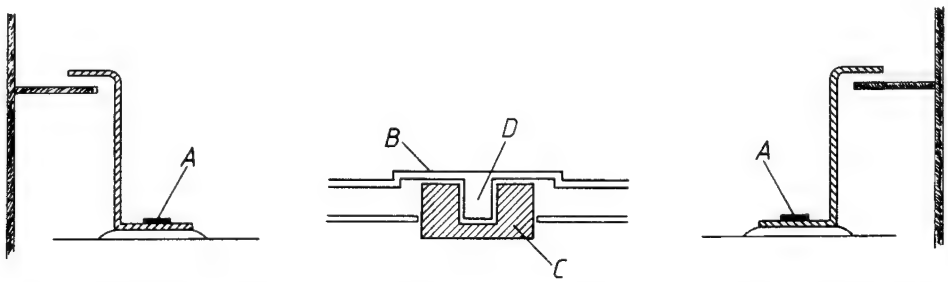


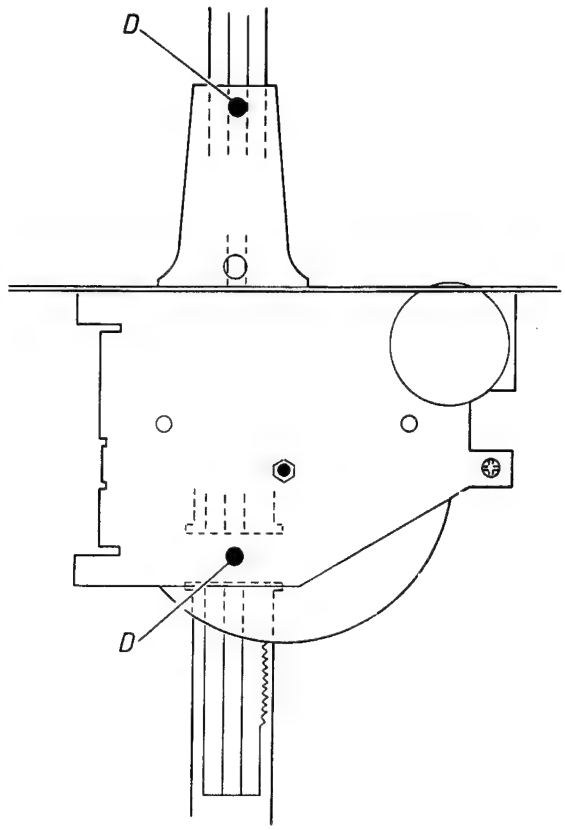
Skuffehøjde bag

Afstanden mellem skuffebagkant B samt styretappene D og tandstangen C skal være min. 0,2 mm.
Afstanden gælder for hele skuffevandringen, justering kan foretages ved at løsne skruerne A og indlægge de under forrige justering nævnte skiver mellem skinnerne og bundpladen.
Der indlægges ens skiver i begge sider og kun i bagkanten.

Drawer height (rear)

The clearance between drawer rear edge B and the guide pins D and the toothed rack C must be min. 0.2 mm.
This clearance applies to the complete drawer travel, and the adjustment can be made by loosening the screws A and inserting the shims earlier mentioned between the rails and the bottom plate.
Insert uniform shims at both sides and at the rear edge only.





Smøring

Behovet for eftersmøring er minimalt, men ved større eftersyn og ved udskiftning af vigtige mekaniske dele, bør disse retningslinier følges.

Lubrication

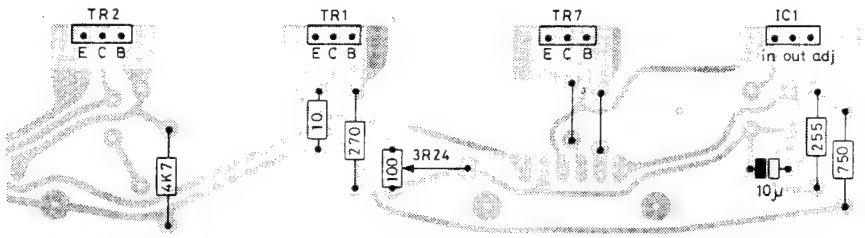
The need for lubrication is negligibible, but the directions given below should be followed during overhauls and when replacing major mechanical components.

Tonehovedbro 22012: Glideflader mod tappe i topchassis, vinkel 22013 og kugle 22025. Kobling 22060: Glideflade mod vinkel 22066 og vinkel 22064. Kurvehjul 22097 og 22104: Glideflade mod aksel i topchassis.	Tape head bridge 22010: Fase slidings against taps in top chassis, bracket 22013 and ball 22025. Clutch 22060: Fase sliding against bracket 22066 and bracket 22064. Cam lifting wheel 22097 and 22104: Fase sliding against shaft in top chassis.	3984216 Rocol MTS 1000
Trykrulle 22020: Glideflade mod aksel. Svinghjul 22122: Glideflade mod bundleje 22124.	Pressure wheel 22020: Fase sliding against shaft. Flywheel 22122: Fase sliding against bottom bearing 22124.	3984021 Eprohon grease
Spoletallerkener 22034 og 22048: Glideflader mod aksler i topchassis og og ring 22036. Berøringsflader mellem aksel 22029, vinkel 22044 og vinkel 22043.	Shafts for turntables 22034 and 22048: Fase slidings against shafts in top chassis and ring 22036. Surfaces of contact between shaft 22029, bracket 22044 and bracket 22043.	3984022 Floil GB-TS-1

ELEKTRISKE JUSTERINGER

Henvisningerne er for højre kanal, (henvisningerne i parantes er for venstre kanal).
Koordinat betegnelse er angivet efter positionsnumre.
Elektriske justeringer foretages uden DOLBY NR hvis andet ikke er nævnt.
Ved justeringer hvor der skal benyttes tonegenerator, tilsluttes denne AUX indgangen.

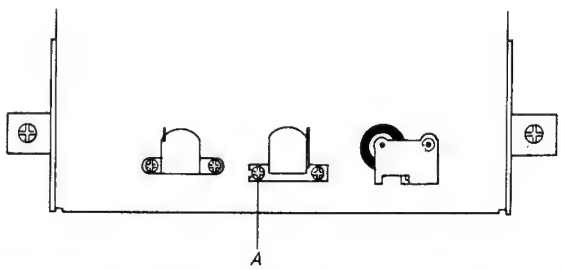
+5 Volt



DC voltmeter tilsluttes med + på 1R55G12 og stel ved microcomputeren evt. 1C33E12.
Apparatet stilles i stilling STOP og CLEAR COUNTER.
3R24 justeres til +5 V.

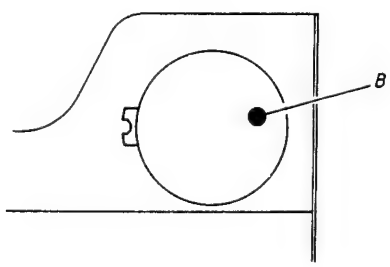
Azimut

Tonehoved og slettehoved afmagnetiseres.
LF voltmeter tilsluttes 1TP3B1 (1TP4A2).
Azimut bånd 6780036 ilægges.



Skruen A justeres til max. i begge kanaler og til ens output for venstre og højre kanal (middelværdi i 1TP3 (1TP4)).

Hastighed



Wow bånd 6780037 ilægges.
Med potentiometer B i motoren justeres til korrekt hastighed aflæst på et wow meters drift meter.
Justeringen foretages midt på båndet.

ELECTRICAL ADJUSTMENTS

The references apply to the RH channel (the references in parentheses apply to the LH channel).
The co-ordinate denomination is indicated after the position numbers.
If not otherwise instructed, always make the electrical adjustments without DOLBY NR.
In cases where a tone generator is needed, it must be connected to the AUX socket.

+5 Volt

Connect a DC voltmeter to + on 1R55G12 and chassis at the microcomputer, possibly 1C33E12.
Set the recorder in mode STOP and CLEAR COUNTER.
Adjust 3R24 to +5 V.

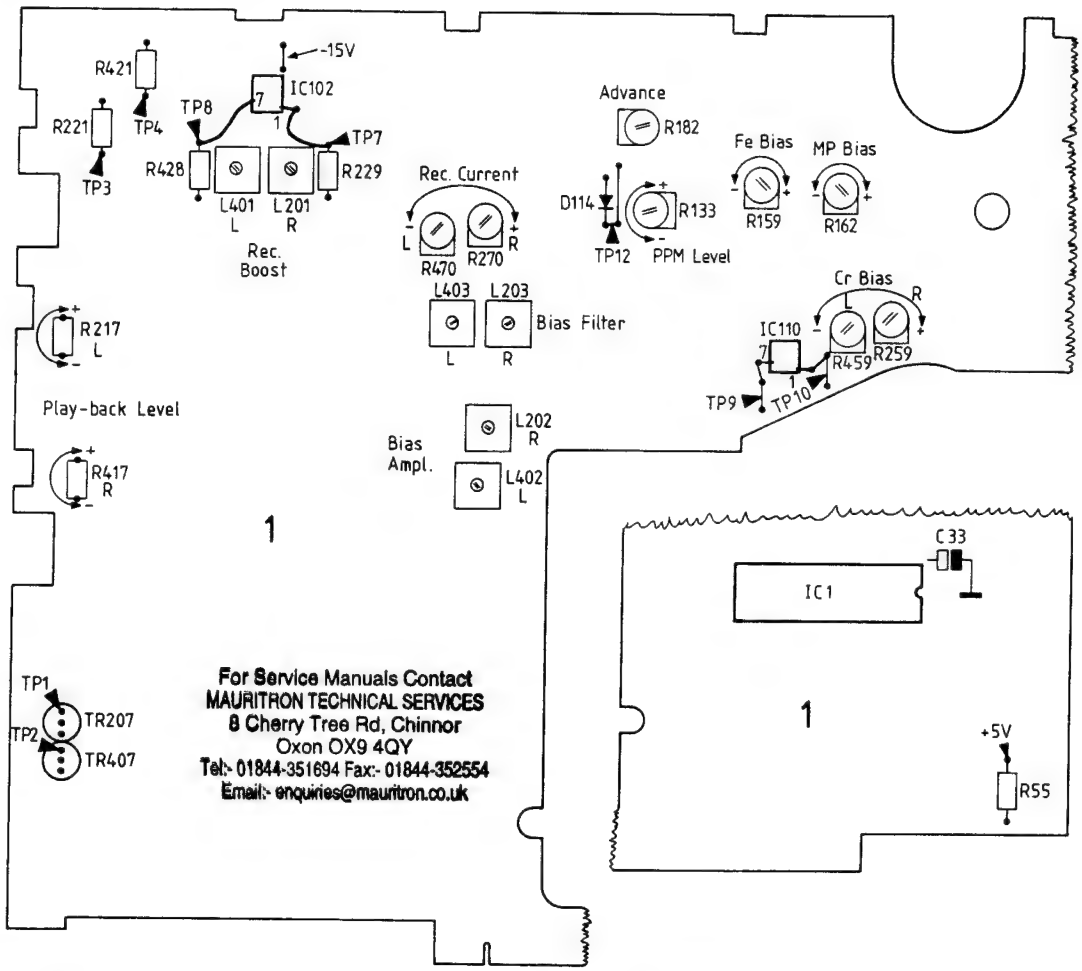
Azimuth

Demagnetize the recording and erase head.
Connect an AF voltmeter to 1TP3B1 (1TP4A2).
Load azimuth tape 6780036.

Adjust the screw A to max. in both channels and to uniform outputs for the LH and RH channels (mean value in 1TP3 (1TP4)).

Speed

Load wow tape 6780037.
Adjust, by means of the potentiometer B in the motor, for correct speed as read on the driftmeter of a wow meter.
Make the adjustment in a centre position on the tape.



Gengiveniveau

Justering af gengiveniveau er her beskrevet efter to norm bånd.

1: DIN standard, 250 pWb mm.
2: Dolby level, 200 pWb mm.

1: Pegel bånd 6780035 ilægges.
LF voltmeter tilsluttes 2TP5D2 (2TP6B2)
1R217C1 (1R417D1) justeres til der måles
660 millivolt i 2TP5 (2TP6).

2: Dolby level calibration bånd MTT-150A ilægges.
LF voltmeter tilsluttes 2TP5D2 (2TP6B2).
1R217C1 (1R417D1) justeres til der måles
580 millivolt i 2TP5 (2TP6).

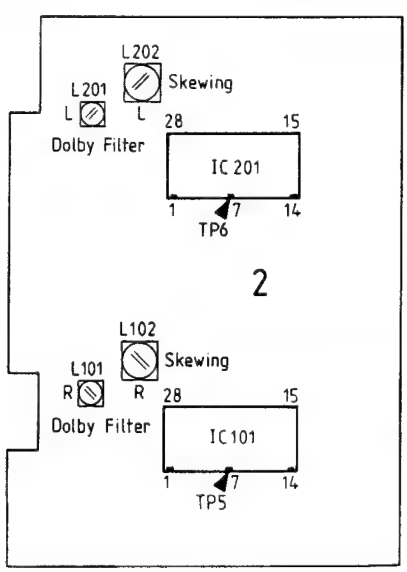
Playback level

Adjustment instructions for the playback level are given below according to two types of level tape:

1: DIN standard, 250 pWb mm.
2: Dolby level, 200 pWb mm.

1: Load level measuring tape 6780035.
Connect an AF voltmeter to 2TP5D2 (2TP6B2).
Adjust 1R217C1 (1R417D1) until a reading of
660 millivolt is obtained in 2TP5 (2TP6).

2: Load Dolby level calibration tape MTT-150A.
Connect an AF voltmeter to 2TP5D2 (2TP6B2).
Adjust 1R217C1 (1R417D1) until a reading of
580 millivolt is obtained in 2TP5 (2TP6).



Optagehæv

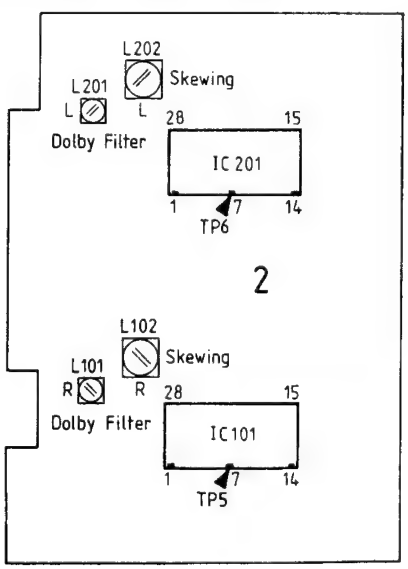
Denne justering skal være meget nøjagtig.
CrO_2 bånd ilægges.
Tonegenerator indstilles til at afgive 333 Hz og ca. 30 millivolt.
LF voltmeter tilsluttes 1TP7A3 (1TP8A2).
Record pause aktiveres. (Record open, derefter Record).
Record potentiometrene indstilles til der måles 100 millivolt i 1TP7 (1TP8).
LF voltmeter tilsluttes 1TP3A1 (1TP4A2).
Spændingen i 1TP3 (1TP4) aflæses og noteres.
Tonegeneratorens frekvens ændres til 19 kHz.
Record potentiometrene reguleres således, at spændingen i 1TP3 (1TP4) er nøjagtig den samme ved 19 kHz som ved 333 Hz.
LF voltmeter tilsluttes 1TP7A3 (1TP8A2).
Med 1L201B3 (1L401B2) justeres til der måles 1,4 volt i 1TP7 (1TP8) (svarer til +23 dB ved 19 kHz i forhold til 333 Hz).

PPM

Tonegenerator indstilles til at afgive 333 Hz og ca. 300 millivolt.
LF voltmeter tilsluttes 2TP5D2 (2TP6B2).
Record pause aktiveres.
Record potentiometrene indstilles til der måles 660 millivolt i 2TP5 (2TP6).
1R133B6 justeres indtil den første røde lysdiode netop tænder.

4R4:
4R4 skal kun justeres ved udskiftning af 4IC1, 4R4 eller 4R5.

Tinkortslutningen A afbrydes.
Milliamperemeter tilsluttes de to kortslutningspunkter.
Tonegenerator indstilles til at afgive 333 Hz og ca. 300 millivolt.
Record pause aktiveres.
Record potentiometrene indstilles til der er lys i både L og R PPM.
4R4 justeres indtil der måles 14 milliampere.



Record boost

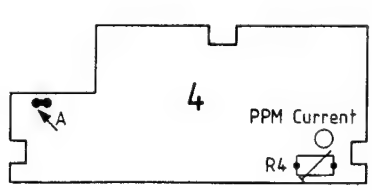
This adjustment must be very accurate.
Load a CrO_2 tape.
Set a tone generator to yield 333 Hz and approx. 30 millivolt.
Connect an AF voltmeter to 1TP7A3 (1TP8A2).
Activate Record pause (Record open, then Record).
Adjust the Record potentiometers until a reading of 100 millivolt is obtained in 1TP7 (1TP8).
Connect an AF voltmeter to 1TP3A1 (1TP4A2).
Take a reading of the voltage in 1TP3 (1TP4) and make a note.
Alter the frequency of the tone generator to 19 kHz.
Adjust the Record potentiometers until the voltage in 1TP3 (1TP4) is exactly the same at 19 kHz as at 333 Hz.
Connect an AF voltmeter to 1TP7A3 (1TP8A2).
Adjust with 1L201B3 (1L401B2) until a reading of 1.4 volt is obtained in 1TP7 (1TP8) – (corresponding to +23 dB at 19 kHz in relation to 333 Hz).

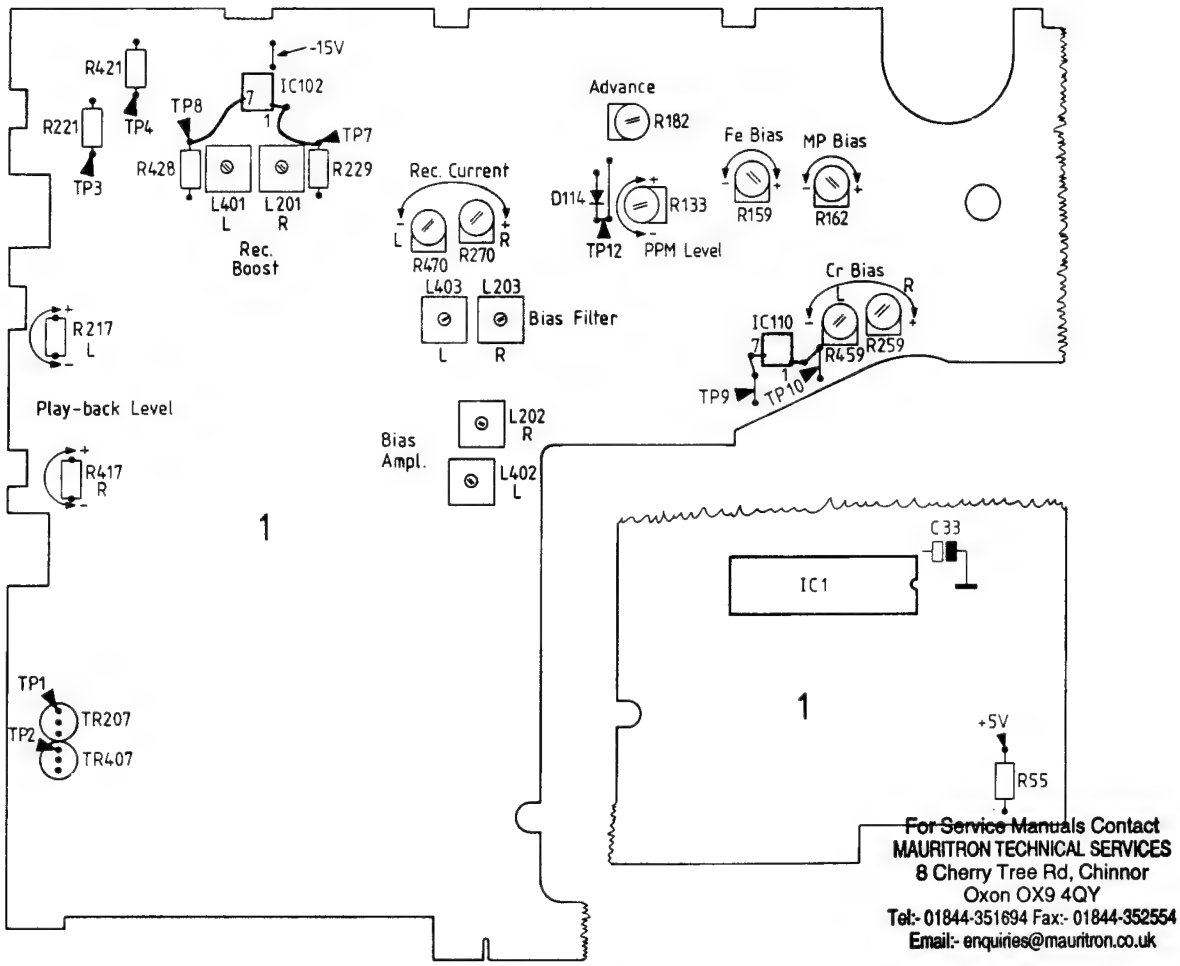
PPM

Set the tone generator to yield 333 Hz and approx. 300 millivolt.
Connect an AF voltmeter to 2TP5D2 (2TP6B2).
Activate Record pause.
Adjust the Record potentiometers until a reading of 660 millivolt is obtained in 2TP5 (2TP6).
Adjust 1R133B6 until the first red LED is just beginning to glow.

4R4:
4R4 only needs adjustment if 4IC4, 4R4 og 4R5 have been replaced.

Disconnect the tin short-circuit A.
Connect a milliammeter to the two short-circuit points.
Set the tone generator to yield 333 Hz and approx. 300 millivolt.
Activate Record pause.
Set the Record potentiometers until light is visible in both L and R PPM.
Adjust 4R4 until a reading of 14 milliampere is obtained.



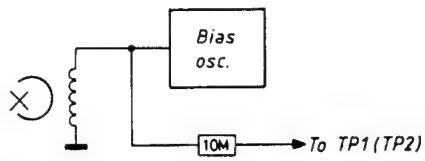


Dolby filter

Der monteres en modstand på 10 Mohm fra slettehovedet til 1TP1F1 (1TP2F1).

Dolby filter

Fit a resistor of 10 Mohm between the erase head and 1TP1F1 (1TP2F1).



LF voltmeter tilsluttes 2TP5D2 (2TP6B2).
Record aktiveres (uden LF signal tilført).
Record potentiometrene stilles i midterstilling.
2L101C1 (2L201A1) justeres til minimum spænding målt i 2TP5 (2TP6).
10 Mohm afmonteres.

Connect an AF voltmeter to 2TP5D2 (2TP6B2).
Activate Record (with no AF signal applied).
Set the Record potentiometers in centre position.
Adjust 2L101C1 (2L201A1) until the minimum reading is obtained in 2TP5 (2TP6).
Remove the 10 Mohm resistor.

Skewing

Dolby NR omskifteren stilles i stilling NR C.
Tonegenerator indstilles til at afgive 19,9 kHz. (±200 Hz) og 300 millivolt.
LF voltmeter tilsluttes 2TP5D2 (2TP6B2).
REC aktiveres.
Record potentiometrene indstilles til der måles 300 millivolt i 2TP5 (2TP6).
2L102C2 (2L202A2) justeres til minimum udslag på LF voltmeteret i 2TP5 (2TP6).

Skewing

Set the Dolby NR switch at NR C.
Set a tone generator to yield 19.9 kHz (±200 Hz) and 300 millivolt.
Connect an AF voltmeter to 2TP5D2 (2TP6B2).
Activate REC.
Adjust the Record potentiometers until a reading of 300 millivolt is obtained in 2TP5 (2TP6).
Adjust 2L102C2 (2L202A2) until minimum deflection is obtained on the AF voltmeter in 2TP5 (2TP6).

Bias og optagestrøm

1R270B4 (1R470B4) stilles i midterstilling.
1R259C8 (1R459C7) stilles 3/4 mod højre.

Bias forstærker og filter

Der måles med DC voltmeter i 1TP9C7 (1TP10C7) i forhold til -15 volt forsyning.
Record aktiveres (uden LF signal tilført).
1L202C4 (1L402D4) og 1L203C4 (1L403C4) justeres til minimum udslag på DC voltmeteret.

Optagestrøm

CrO_2 norm bånd 6780066 ilægges.
Tonegenerator indstilles til at afgive 333 Hz og ca. 300 millivolt.
LF voltmeter tilsluttes 2TP5D2 (2TP6B2).
Record pause aktiveres.
Record potentiometrene indstilles til der måles 200 millivolt i 2TP5 (2TP6).
Ved henholdsvis at optage og gengive justeres 1R270B4 (1R470B4) indtil der måles 200 millivolt under såvel optage som gengive.

CrO_2 bias

CrO_2 norm bånd 6780066 ilægges.
Tonegenerator indstilles til at afgive 333 Hz og ca. 30 millivolt.
LF voltmeter tilsluttes 2TP5D2 (2TP6B2).
Record potentiometrene indstilles til der måles ca. 20 millivolt i 2TP5 (2TP6).
Ved henholdsvis at optage og gengive 333 Hz og 15 kHz, justeres 1R259C8 (1R459C7) indtil niveauet ved 15 kHz er det samme som niveauet ved 333 Hz.
(Mindre bias giver diskant hæv. Mere bias giver diskant fald).
Optagestrøm kontrolleres.

*Fe_2O_3 bias

CrO_2 bias **skal** være justeret, og tonegenerator og record potentiometre skal have samme indstilling som ved CrO_2 bias.
Fe_2O_3 norm bånd 6780067 ilægges.
Ved henholdsvis at optage og gengive 333 Hz og 15 kHz, justeres 1R159B7 indtil niveauet ved 15 kHz er det samme som niveauet ved 333 Hz målt med LF voltmeter i 2TP5.

Bias and recording current

Set 1R270B4 (1R470B4) in its centre position.
Set 1R259C8 (1R459C7) 3/4 turned to the right.

Bias amplifier and filter

Measure with a DC voltmeter in 1TP9C7 (1TP10C7) in relation to the -15 volt supply.
Activate Record (with no AF signal applied).
Adjust 1L202C4 (1L402D4) and 1L203C4 (1L403C4) until minimum deflection on the DC voltmeter is obtained.

Recording current

Load the CrO_2 level measuring tape 6780066.
Set a tone generator to yield 333 Hz and approx. 300 millivolt.
Connect an AF voltmeter to 2TP5D2 (2TP6B2).
Activate Record pause.
Adjust the Record potentiometers until a reading of 200 millivolt is obtained in 2TP5 (2TP6).
Adjust, while recording and playing-back respectively, 1R270B4 (1R470B4) until a reading of 200 millivolt is obtained both during recording and playing-back.

CrO_2 bias

Load the CrO_2 level measuring tape 6780066.
Set a tone generator to yield 333 Hz and approx. 30 millivolt.
Connect an AF voltmeter to 2TP5D2 (2TP6B2).
Adjust the Record potentiometers until a reading of approx. 20 millivolt is obtained in 2TP5 (2TP6).
Adjust, while recording and playing-back 333 Hz and 15 kHz respectively, 1R259C8 (1R459C7) until the level at 15 kHz corresponds to that at 333 Hz (less bias will result in treble boost, while more bias will result in treble cut).
Check recording current.

*Fe_2O_3 bias

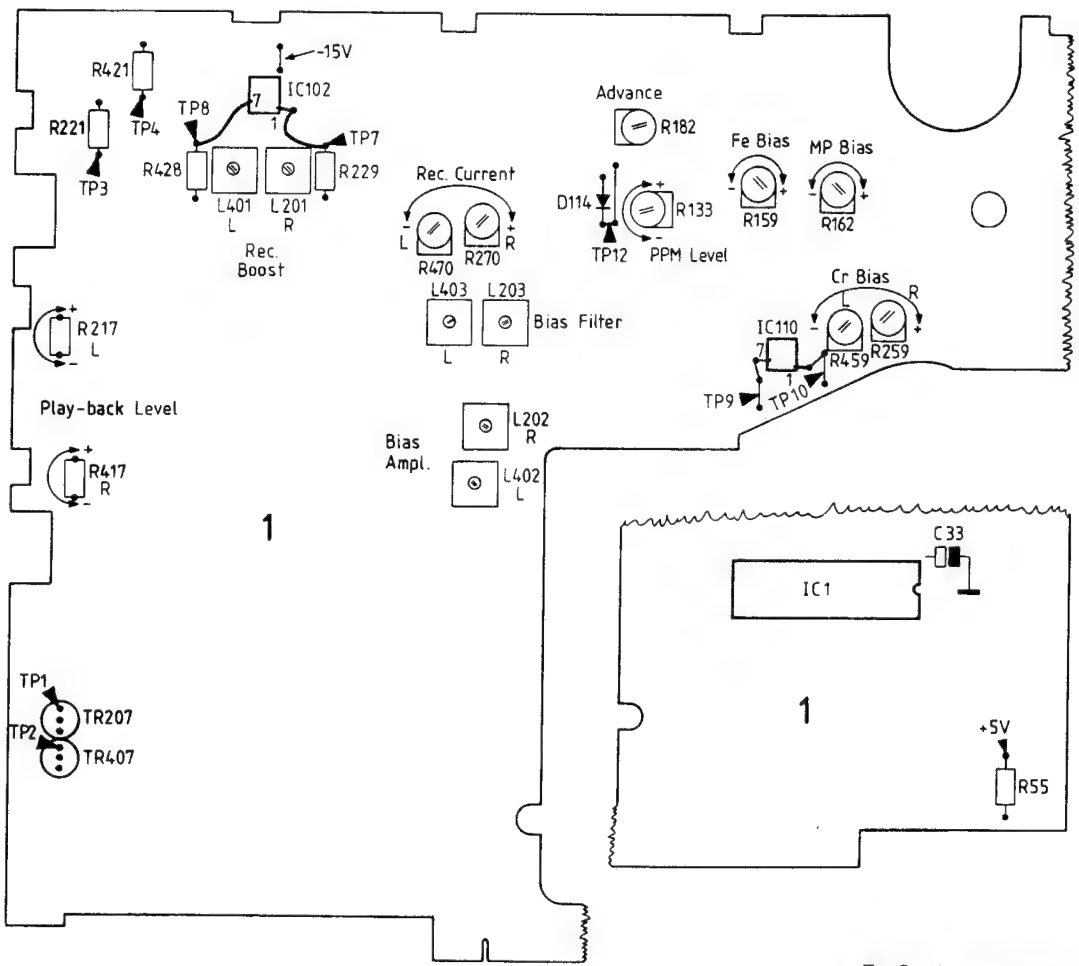
CrO_2 bias **must** already have been adjusted and the tone generator and Record potentiometers must have the same settings as by CrO_2 bias.
Load the Fe_2O_3 level measuring tape 6780067.
Adjust, while recording and playing-back 333 Hz and 15 kHz respectively, 1R159B7 until the level at 15 Hz corresponds to that at 333 Hz as measured with an AF voltmeter in 2TP5.

MP bias

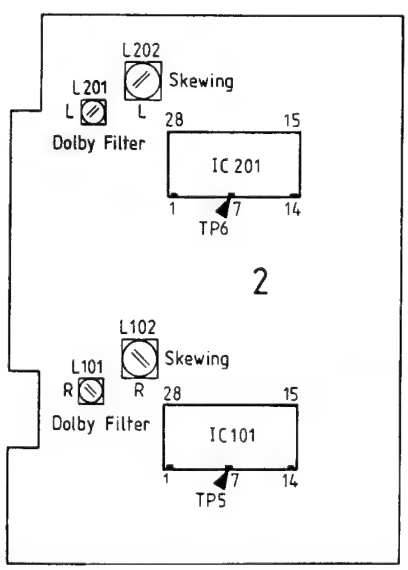
CrO_2 bias **skal** være justeret, og tonegenerator og optagepotentiometre skal have samme indstilling som ved CrO_2 bias.
MP testbånd 6780085 ilægges.
Ved henholdsvis at optage og gengive 333 Hz og 15 kHz, justeres 1R162B7 til niveauet ved 15 kHz er det samme som niveauet ved 333 Hz målt med LF voltmeter i 2TP5.

MP bias

CrO_2 **must** already have been adjusted, and the tone generator and recording potentiometers must have the same settings as for CrO_2 bias.
Load the MP level measuring tape 6780085.
Adjust, while recording and playing-back 333 Hz and 15 kHz respectively, 1R162B7 until the level at 15 kHz corresponds to that at 333 Hz as measured with an AF voltmeter in 2TP5.



For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk



Advance

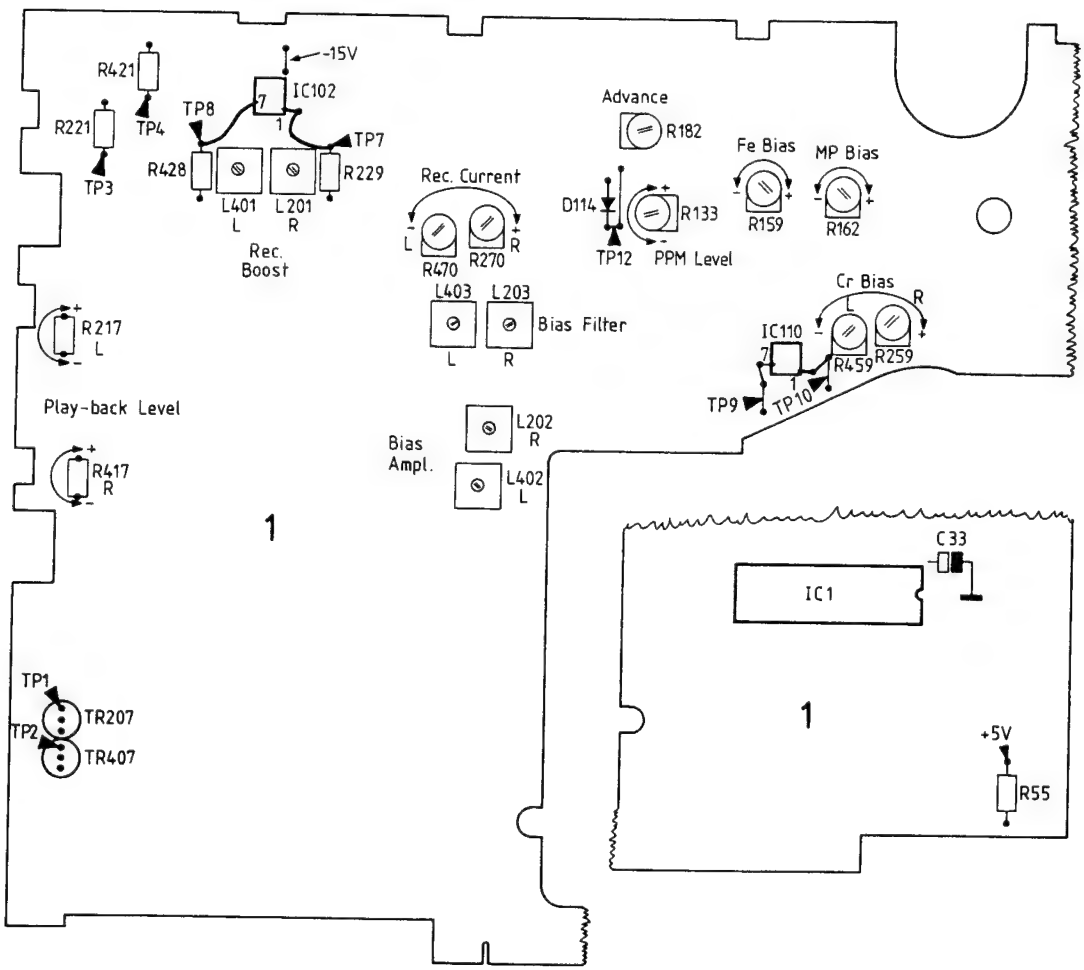
CrO_2 bånd ilægges.
Tonegeneratoren indstilles til at afgive 333 Hz og ca. 300 millivolt.
Record pause aktiveres.
Record potentiometrene indstilles til den første røde lysdiode netop tænder.
Tonegeneratoren dæmpes 30 dB, og dens frekvens ændres til 2,5 kHz.
Der optages et stykke på båndet.
Oscilloscop i stilling DC tilsluttes 1TP12 (katoden af 1D114B5).
Der spoles tilbage til start af optagelse, og play aktiveres.
1R182A6 justeres indtil niveauet i 1TP12 skifter mellem 0 og 12 volt.

*Det skal bemærkes, at der er solgt en del 6780067 kassetter, som kun er kodet for Fe_2O_3 i højre side af kassetten.
Da Fe_2O_3/CrO_2 omskifteren i type 49xx, (til forskel fra tidligere modeller) er placeret i venstre side af løbeværket, skal hullet i venstre side af kassettens bagkant lukkes for Fe_2O_3 indstilling af båndoptageren.

Advance

Load a CrO_2 tape.
Set the tone generator to yield 333 Hz and approx. 300 millivolt.
Activate Record pause.
Adjust the Record potentiometers until the first LED just starts to glow.
Dampen the tone generator by 30 dB and alter its frequency to 2.5 kHz.
Make a recording on the tape.
Connect an oscilloscope in the DC mode to 1TP12 (the cathode of 1D114B5).
Rewind to the start of the recording and activate Play.
Adjust 1R182A6 until the level at 1TP12 is alternating between 0 and 12 volt.

*The fact is pointed out that a number of 6780067 cassettes have been sold which have been coded for Fe_2O_3 in the right hand side of the cassette only.
Since the Fe_2O_3 switch in type 49xx (as different from earlier models) has been located to the left of the train drive, the hole to the left of the rear edge of the cassette must be blocked for Fe_2O_3 setting of the tape recorder.



TECHNICAL SPECIFICATIONS

Compact Cassette	C46-C60-C90-C120
Tape head	M&X
Recording system	HX PRO
Noise reduction system	Dolby B and C
Tape switch	Automatic ferro/chrom/metal
Wow and flutter DIN	<±0.13%
Wow and flutter WRMS	<0.078%
Speed deviation	<±1.5%
Fast forward and rewind C60	100 sec.
Frequency range chrom	30-18.000 Hz ±3 dB

Signal-to-noise ratio CCIR/ARM:

Metal Dolby NR	B: >64 dB, C: >73 dB TDK-MA
Chrom	B: >65 dB, C: >74 dB TDK-SA
Ferro	B: >63 dB, C: >72 dB BASF LH I

Signal-to-noise ratio IEC/DIN:

Metal	>56 dB. TDK-MA
Chrom	>56 dB TDK-SA
Ferro	>55 dB BASF LH I
Maximum Output Level, metal	Better than -5 dB
Maximum Output Level, chrom/ferro	Better than -10 dB
Distortion ferro	<2%
Channel separation	>35 dB
Erasure	>70 dB
Erasure frequency	96 kHz
Radio input, LINE	60 mV/22 kohms
Microphone input	0.18 mV/3 kohms
AUX input	60 mV/22 kohms
Radio output	660 mV/200 ohms
Power supply	220 volts
Power frequency	50-60 Hz
Power consumption	Max. 35 watts
Dimensions W x H x D	42 x 7.5 x 32.5 cm
Weight	8.35 kg
Subject to change without notice	

ADSKILLELSE

Transportsikring

Før brug fjernes de fire transportlåse i bunden, og de placeres som beskrevet på bunden.

Kabinet

De to skruer i bagkanten løsnes og løftes op.
Samtidig presses kabinettet ca. 1 cm bagud, og kan nu løftes af.

Betjeningspanel

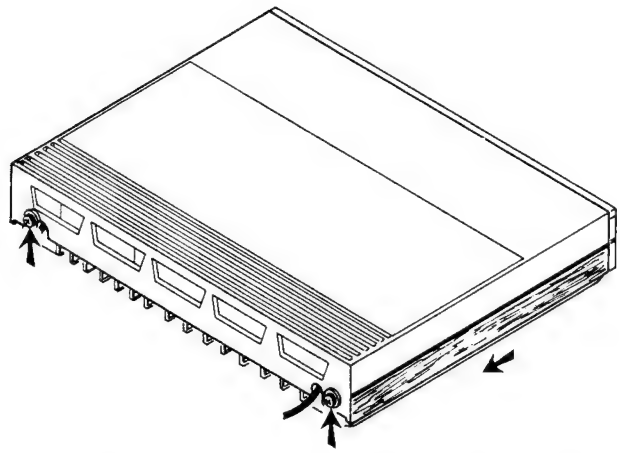
Pres låsetrappene i begge sider ind.
Betjeningspanelet kan nu tages op.
1P2 skal aftages hvis betjeningspanelet fjernes helt.

DISASSEMBLY

Protection during shipping

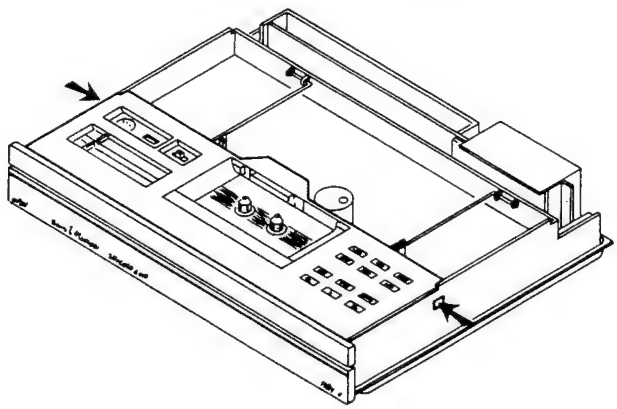
Remove the four shipping fasteners at the bottom before use and place them at the bottom, as described.

Cabinet



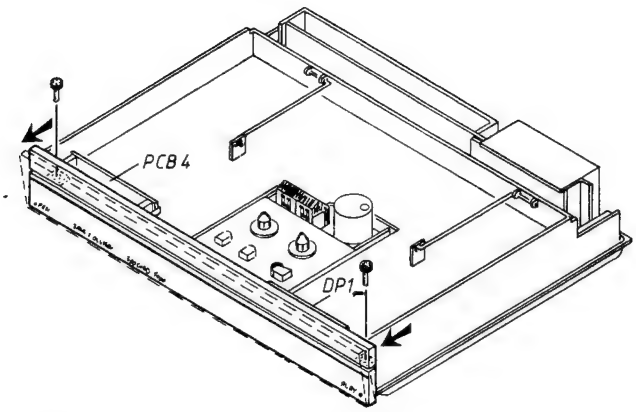
Loosen the two screws at the rear edge and press them upwards while simultaneously pushing the cabinet approx. 1 cm rearwards.
It can now be removed.

Control panel



Press the retainer pins inwards at both sides.
The control panel can now be removed.
It is necessary to remove 1P2, if the control panel is to be removed completely.

Frontpanel

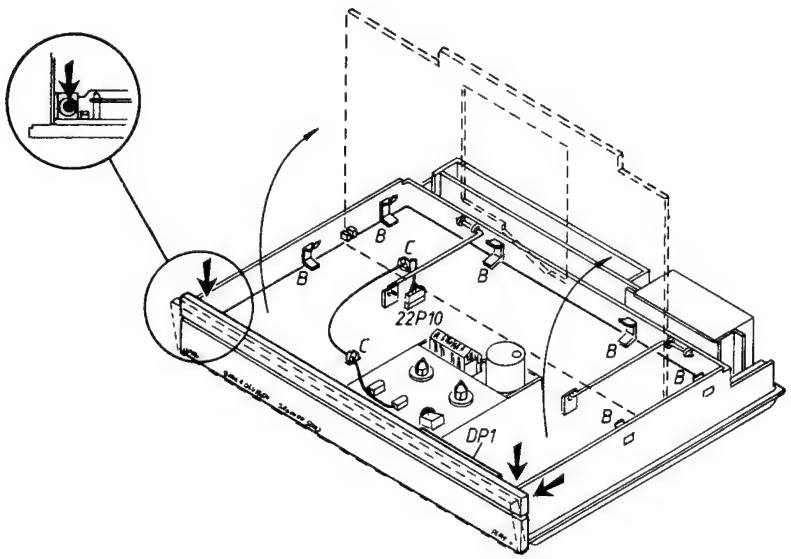


Afmonter de to viste skruer og DP1.
Frontpanelet vippes frem.
Afmonter PCB4 og kontakterne for PLAY og OPEN.

Front panel

Remove the two screws, as shown, as well as DP1.
Tilt the front panel forwards.
Remove PCB4 and the switches for PLAY and OPEN.

PCB1



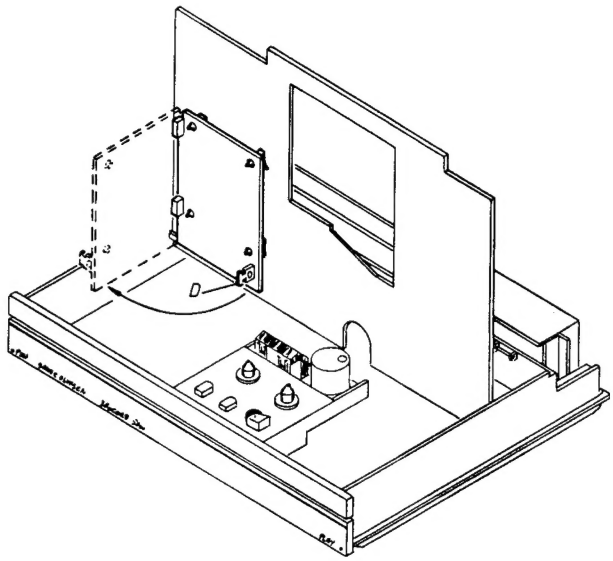
De to skruer til frontpanel **løsnes**.
DP1 afmonteres.
Frontpanelet vippes ca. 1 cm frem.
Afmonter de seks PCB holdere (B).
Tonehovedledning frigøres fra ledningsholdere (C) og servicebøjlen.
Servicebøjlen monteres igen.
22P10 skal ikke afmonteres.
PCB1 kan nu placeres i servicestilling mellem de to metalflige i skuffesiderne.

PCB1

Loosen the two front panel screws.
Remove DP1.
Tilt the front panel approx. 1 cm forwards.
Remove the six PCB retainers (B).
Release the tape head wire from the wire clamps (C) and the servicing support arm.
Refit the servicing support arm.
Do not remove 22P10.
It is now possible to place PCB1 in servicing position between the two metal holders at the drawer sides.

PCB2

PCB2

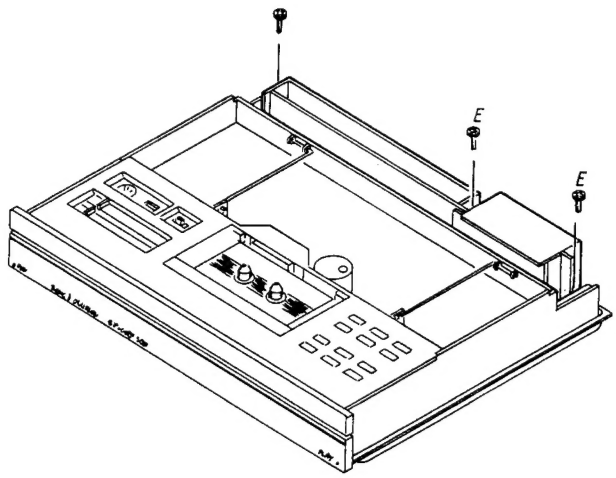


PCB1 sættes i servicestilling.
PCB2 løsnes fra de fire plast holdere, og svinges ud som vist.
Metalholder (D) kan sættes fast på skuffesiden.

Set PCB1 into its servicing position.
Loosen PCB2 from the four plastic retainers and swing it outwards, as shown.
It is now possible to fit the metal retainer (D) on the drawer side.

Transformator

Transformer



For at aftage transformator afmonteres skruerne E.

Remove the screws E to dismount the transformer.

Netdel

For at aftage transformator og netdel samtidig afmonteres de tre viste skruer.

Power supply

Remove the three screws shown with a view to dismounting the transformer and power supply as a sub-assembly.

ISOLATIONSTEST

Ethvert apparat **skal** isolationstestes efter at det har været adskilt. Testen udføres når apparatet igen er helt samlet og klar til udlevering til kunden.

Isolationstest for Beocord 5000

Isolationstesten udføres på følgende måde:
De to stikben på netstikket kortsluttes og tilsluttes en af terminalerne på isolationstesteren. Den anden terminal fra isolationstesteren tilsluttes stelbenet (ben 2) i signalkabelstikket.

OBS!
For at undgå beskadigelser på apparatet er det vigtigt, at begge terminaler fra isolationstesteren har virkelig god mekanisk kontakt.

Der drejes nu langsomt med spændingsreguleringen på isolationstesteren indtil en spænding på 1,5-2 kV er opnået. Her skal den holdes i 1 sekund, derefter drejes der langsomt ned for spændingen igen.

Der må ikke på noget tidspunkt under testen forekomme overslag.

INSULATION TEST

Each set **must** be insulation tested after dismantling. The test is to be performed when the set has been re-assembled and is ready for delivery to the customer.

Insulation test for Beocord 5000

Make the insulation test as follows: – Short-circuit the two plug pins of the mains plug and connect one of the terminals of the insulation tester. Connect the other terminal of the insulation tester to the chassis pin (pin 2) of the signal cable plug.

N.B.!
To avoid tuining the set, it is essential that both insulator test terminals are in really good mechanical contact.

Now turn slowly the voltage control of the insulation tester until a voltage of 1.5-2 kV is obtained. Hold it there for 1 second, then turn slowly the voltage down again.

At no point during the testing procedure any flash-overs are permissible.

MODIFIKATIONER

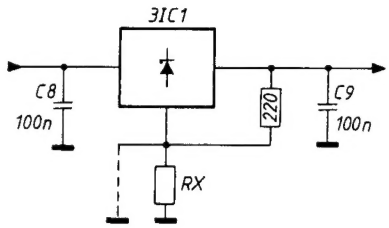
5 V netdel

I de først producerede apparater er 5 volt netdelen 3IC1 ikke justerbar (se nedenstående skitse).

MODIFICATIONS

5 V power supply

In the tape recorders first manufactured the 5 volt supply 3IC1 unit is not adjustable (cf. below diagram).



Ved udskiftning af 3IC1 skal følgende procedure følges:
Efter montering af 3IC1 **skal** modstanden RX kortsluttes (i nogle få apparater er RX og 220 Ω ikke monteret men ground benet på 3IC1 er direkte til stel).
DC voltmeter tilsluttes med + på 1R55G12 (katode af 1D11G12) og stel ved microcomputeren evt. 1C33E12.
Apparatet stilles i stilling STOP og CLEAR COUNTER.
Spændingen på DC voltmeteret aflæses og noteres.
Ved hjælp af nedenstående skema udvælges størrelsen af RX. Kortslutningen på 3IC1 fjernes og RX monteres.

When replacing 3IC1 the following procedure must be followed:
After the fitting of 3IC1, **bridge** the resistor RX (in a few tape recorders the RX and 220 Ω are not fitted, but the ground pin on 3IC1 has a direct path to chassis).
Connect a DC voltmeter with + on 1R55G12 (cathode of 1D11G12) and chassis at the microcomputer, 1C33E12, in some cases.
Set the tape recorder in STOP and CLEAR COUNTER modes.
Read and take a note of the voltage on the DC voltmeter. By means of the below diagram, select the RX capacity. Remove the bridging on 3IC1 and fit RX.

Spændingen på 1R55 kontrolleres til at ligge mellem 4,9 – 5,1 V i stilling STOP og CLEAR COUNTER.

Check the voltage on 1R55 and adjust it to between 4.9 – 5.1 V in STOP and CLEAR COUNTER modes.

Wow frekvenser/ Wow frequencies	Frekvens/ Frequency	Fejlkilde	Source of Failure	Pos. nr. Pos. no.
	0.37 Hz	Remskive	Pulley	22096
	1.17 Hz	Trykrulle	Thrust roller	22020
	2.7 Hz	Spoletallerkener (midt op bånd)	Supply reels (middle of tape)	22034/ 22048
	3 Hz	Rem	Belt	22065
	4.2 Hz	Rem	Belt	22123
	6 Hz	Svinghjul	Flywheel	22122
	9.6 Hz	Opsamlekobling	Take-up cluth	22061
	12.7 Hz	Remskive	Pulley	22109
	36.7 Hz	Remskive	Pulley	22141